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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1989

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

H.R. 4567

AN ACT MAKING APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1989, AND FOR OTHER PURPOSES

PART 2 (Pages 881-2086)

NONDEPARTMENTAL WITNESSES

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1989

MONDAY, APRIL 11, 1988

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room SD–192, Dirksen Senate Office Building, Hon. Mark O. Hatfield presiding.

Present: Senators Johnston, Hatfield, and Domenici; also present: Senators Hatch, Heflin, and Shelby.

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator HATFIELD. The hearing will please come to order.

This morning we have a very large number of witnesses scheduled to be heard and we want to hear from each of you. I would urge, therefore, that everyone use some self-restraint to hold your oral testimony to the time allotted. We will take your full prepared statements and place them in the record so that it will be available for reference and for study by the subcommittee.

I would like to welcome each of you here this morning. I am delighted to have my colleague from the state of Utah to represent the members of the Utah delegation who wish to be heard on various and sundry projects in Utah.

I believe also, Senator, that you will represent the Governor in making this presentation as well.

So, we welcome our very distinguished and honored colleague from Utah, Senator Hatch.

STATEMENT OF HON. ORRIN G. HATCH, U.S. SENATOR FROM UTAH

Senator HATCH. Thank you, Mr. Chairman.

It is an honor to be here with you today and to represent our Governor and Senator Garn, and I appreciate this opportunity to appear before your committee this morning to testify in support of the $151 million budget request for the Central Utah Project.

This is a project, Mr. Chairman, to which the people of Utah continue to be strongly committed, and a project which has come a very long way toward completion in the last few years.

For many years, Mr. Chairman, you have been a steadfast supporter

of this project and I want to express on behalf of Senator Garn, our Governor, and myself, our personal appreciation and the appreciation of the members of the Central Utah Water Conservancy District's board of directors as well as the gratitude of all of the people of Utah for your assistance in moving this project toward its completion in 1995.

STATUS OF CONSTRUCTION

I would like to review just briefly for you the status of the project. We have finished or will finish by the end of this fiscal year some very important features of this project, including stage II of the Upper Stillwater Dam, which is now storing water. And major utility and relocation is underway for the Jordanelle Dam.

As a result of these efforts, the construction on the Bonneville unit of the project is nearly 50-percent complete.

During the next year we are planning to commit major resources to work on the Jordanelle Dam, in addition to work on the Alpine Aqueduct, Upper Stillwater Dam, and the SYAR Tunnel. The approval of the administration's appropriation request by your committee will allow us to meet our target completion date of 1995.

I wholeheartedly support the approach Secretary Hodel and the Commissioner of Reclamation have taken to concentrate available funds on those few projects which were substantially completed, so that they can be more quickly completed, at which time the government will begin to recoup payment obligations over to the Treasury from project construction. This not only speeds up the benefits for the project users, but also reduces overall costs.

Mr. Chairman, as I mentioned previously, the people of Utah are committed to this project and recognize that our future as a state in large part depends on our wise management and utilization of our water.

Senator Garn and I, along with other representatives of the Utah delegation, will unitedly do all that we can to see that the Central Utah Project is brought to completion; that long-term commitments for water made to the people in our cities and towns, and particularly our farmers, are carried out.

Before I introduce the members of the conservancy board, Mr. Chairman, I would also like to introduce members of the Salt Lake City Metropolitan Water District representing Little Dell Dam. We have Mr. Charlie Wilson—if I could have you stand, Mr. Wilson—chairman of the board; Mr. Nick Sefackis, general manager; and Mr. Roy Hooton, director of public utilities; and I would ask that their testimony on their project be submitted for the record, if it could.

Now, I would now like to introduce to you, Mr. Chairman, Mr. Robert Hilbert, the chairman of the board of the Central Utah Water Conservancy District; and the executive director, Don Christiansen; and other members of the board who then will be introduced to you. If you could take their testimony, we will be very appreciative.

I just want to thank you, Mr. Chairman, for the efforts you have fulfilled and for the support you have provided for us. This means so much to us in the state of Utah and we just want you to know that.

Senator HATFIELD. Thank you, Senator Hatch. We are happy to have you here. I know you have a conflicting schedule this morning, and I think you can feel quite assured and quite a peace of mind to leave your good Utah people in the company of the chair this morning.

Senator HATCH. I think that is what I will do.

I know that we are in good hands and want you to know that you could not have a better person here chairing this hearing this morning. So, we welcome all of you. We are glad to have you here and we appreciate the work that you are doing.

Thank you, Mr. Chairman.

Senator HATFIELD. Thank you, Senator Hatch.

CENTRAL UTAH PROJECT

STATEMENT OF ROBERT HILBERT, CHAIRMAN OF THE BOARD, CENTRAL UTAH WATER CONSERVANCY DISTRICT

ACCOMPANIED BY:
DON CHRISTIANSEN, EXECUTIVE DIRECTOR
ROSS GARRETT, VICE CHAIRMAN OF THE BOARD
JERRY MALONEY, EXECUTIVE COMMITTEE MEMBER
L. WHITE, EXECUTIVE COMMITTEE MEMBER
HENRY NEILSON, EXECUTIVE COMMITTEE MEMBER
BILL RASMUSSEN, EXECUTIVE COMMITTEE MEMBER

Senator HATFIELD. You may proceed as you wish, Mr. Hilbert. As I say, we will incorporate your entire statement.

Mr. HILBERT. Thank you, Mr. Chairman.

Good morning and thank you, Senator Hatch, for that very generous introduction.

Mr. Chairman, I am Robert Hilbert, chairman of the board of the Central Utah Water Conservancy District. The district is supervised, if you will, by a 19-person board.

We have with us today six members of our executive committee: On my left is the vice chairman of the board, Ross Garrett; on my right Jay Maloney, L. White, Henry Neilson, and Bill Rasmussen, on the far end. This constitutes the executive committee.

Senator Hatch introduced three other individuals—Roy Hooton and Nick Sefackis, who are actual members of the board, and Mr. Charles Wilson, who is a panel member of the Central Utah Water Conservancy District. So, we have eight members of a 19-person board here.

As indicated, our testimony has been given to your staff, Mr. Chairman, and made a part of the record. I want to echo all of the Senator's remarks related to the project. We appreciate the support that this committee has given to the project over the last few years and we look forward to the continued support.

As the Senator indicated, the President's budget has $151 million to keep the project moving ahead. We are almost 50-percent complete; we are on schedule to complete the project by 1995 to develop a water supply for municipal, industrial, and agricultural uses. There are tremendous benefits to the environment throughout the state of Utah and they will be a companion beneficiary along with the other users of the state.

The people of the state support this project, most recently a 73-percent vote in favor of the repayment contract, the renewal of the repayment contract, and it is moving ahead. Our board has been encouraged with the progress we have seen. Construction bids are coming considerably less than the Bureau of Reclamation estimated.

We appreciate the time to appear before your committee this morning, and again thank you for the support in the past and, hopefully, your support in the future.

I don't know if I introduced our general manager, Don Christiansen; he is the person who always gets the work done, makes all the hands and the board members tow the line. Don does an outstanding job in keeping projects moving ahead, and we welcome Don with us today, also, Mr. Chairman.

That would conclude our remarks unless any other members of the group would like to say a few words.

Senator HATFIELD. Does any one else wish to make any comment?

[No response.]

Senator HATFIELD. Does the Governor have a separate statement to offer for the record?

Mr. HILBERT. Yes; we would like that to be inserted into the record as well.

Senator HATFIELD. We will keep a space in the record for the Governor's statement.

[The statements follow:]

Statement of Gov. Norman H. Bangerter of Utah

The Administration budget for FY 1989 contains a line item (U.S. Army Corps of Engineers Civil Works) of $7.8 million for Little Dell Lake. The State of Utah has been working with the Corps for many years to bring this project, which will provide much-needed flood control and municipal water to the Salt Lake City area, to realization. The Little Dell project was considered to be of such importance that in FY 1987 the State, through the Utah Board of Water Resources, provided substantial financial assistance ($1.5 million) so that work could continue.

We strongly urge that your subcommittee favorably consider this vital project.

Statement of Robert Hilbert, Chairman of the Board, Central Utah Water Conservancy District

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE, AS CHAIRMAN OF THE CENTRAL UTAH WATER CONSERVANCY DISTRICT, I WANT TO THANK YOU FOR THIS OPPORTUNITY TO TESTIFY ON BEHALF OF THE FISCAL YEAR 1989 APPROPRIATION FOR THE CENTRAL UTAH PROJECT. ACCOMPANYING ME TODAY IS DON CHRISTIANSEN, GENERAL MANAGER OF THE DISTRICT. IT IS WITH A STRONG SENSE OF PERSONAL GRATITUDE, AS WELL AS THE GRATITUDE OF THE PEOPLE OF UTAH, THAT I TESTIFY IN STRONG SUPPORT OF THE ADMINISTRATION'S FISCAL 1989 REQUEST FOR FUNDS FOR THE CENTRAL UTAH PROJECT.

AS YOU KNOW, MR. CHAIRMAN, THE BUREAU OF RECLAMATION HAS REQUESTED $151.5 MILLION FOR NEXT YEARS' BUDGET FOR THE PROJECT. THIS REPRESENTS A SUBSTANTIAL INCREASE FROM ACTUAL FISCAL 1988 EXPENDITURES OF APPROXIMATELY $120 MILLION. THE COMMISSIONER OF RECLAMATION STATED IN HIS TESTIMONY BEFORE THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT ON MARCH 9TH OF THIS YEAR THAT THE BUREAU WAS CONTINUING ITS PROGRAM OF CONCENTRATING FUNDS ON THEIR PROJECTS IN WHICH A SUBSTANTIAL PORTION HAS BEEN COMPLETED. AS COMMISSIONER DUVALL NOTED, BY CONCENTRATING THE CONSTRUCTION FUNDS ON PROJECTS SUCH AS THE CUP IN ORDER TO FINISH THEM FASTER, ACTUAL BENEFITS WILL BE DELIVERED FASTER AND REPAYMENT FOR THE PROJECT STARTED EARLIER. WE AGREE WITH THIS POLICY OF THE BUREAU NOT ONLY BECAUSE IT BENEFITS OUR PROJECT BUT BECAUSE

IT HELPS TO REDUCE COSTS AND WILL DELIVER THE PROJECT BENEFITS MUCH SOONER. IN THE LONG RUN THIS WILL BE A MAJOR POSITIVE BENEFIT FOR ALMOST ALL RECLAMATION CONSTRUCTION PROJECTS.

BEFORE DISCUSSING THE CONSTRUCTION PLANNED FOR FISCAL 1989, I BELIEVE IT IS IMPORTANT THAT I REVIEW WITH YOU WHAT HAS BEEN COMPLETED OR IS BEING FINISHED AS A RESULT OF LAST YEARS' APPROPRIATIONS FOR THE CENTRAL UTAH PROJECT.

WORK ON THE PROJECT, WHICH HAS BEEN COMPLETED DURING THIS FISCAL YEAR, INCLUDES STAGE TWO OF THE UPPER STILLWATER DAM WHICH HAS ONLY SOME CONTROL WORK LEFT TO BE DONE. IN FACT, UPPER STILLWATER DAM IS NOW STORING WATER. DOC'S DIVERSION DAM AND CEDAR PIPELINE WILL BE FINISHED IN LATE APRIL OR EARLY MAY AND WATER WILL THEN BE DIVERTED.

THE ROAD DIVERSION DAM AND THE WIN STREAM INLET WERE FINISHED IN DECEMBER AND THEY HAVE STARTED DIVERTING WATER.

AT THE JORDANELLE DAM SITE, POWER LINE RELOCATION AND OTHER UTILITY RELOCATIONS ARE ESSENTIALLY COMPLETED. THREE ROAD CONTRACTS HAVE BEEN AWARDED WHICH WILL RELOCATE ROADS AWAY FROM JORDANELLE RESERVOIR. THE ROADS TO BE MOVED ARE HIGHWAY 40, HIGHWAY 189 AND WASATCH COUNTY ROAD, ROUTE A.

BEFORE THE END OF THE FISCAL YEAR, THE BUREAU INTENDS TO AWARD CONTRACTS FOR THE ALPINE AQUEDUCT REACH 2 WHICH GOES INTO OREM CITY, AND IS PART OF THE M&I CONVEYANCE SYSTEM. A MAJOR PROJECT, SYAR TUNNEL, SHOULD ALSO BE STARTED IN FY-88.

MR. CHAIRMAN, WE ARE MAKING VERY IMPORTANT PROGRESS TOWARDS THE COMPLETION OF THE BONNEVILLE UNIT OF THE CENTRAL UTAH PROJECT. ACCORDING TO THE BUREAU OF RECLAMATION, THE BONNEVILLE UNIT IS 45 PER CENT COMPLETE AS OF JANUARY 31ST OF THIS YEAR. IN ORDER TO MEET OUR GOAL AND THAT OF THE DEPARTMENT OF INTERIOR'S, WHICH IS TO FINISH THIS PROJECT BY 1995, WE ARE GOING TO HAVE TO CONTINUE THIS QUANTITY OF WORK AND MORE. THE OUTSTANDING COOPERATION, WHICH WE HAVE RECEIVED FROM THIS COMMITTEE IN THE PAST AND HOPE TO RECEIVE IN THE FUTURE, WILL ENABLE THIS TO HAPPEN.

MR. CHAIRMAN, FUNDS FROM THIS YEARS' BUDGET WILL ENABLE THE BUREAU TO START WORK ON SOME VERY IMPORTANT ADDITIONAL FEATURES OF THE CENTRAL UTAH PROJECT, TO CONTINUE WORK ON OTHERS, AND TO COMPLETE WORK ON STILL OTHER FEATURES.

JORDANELLE DAM WILL BE THE MAJOR FOCUS OF THE CONSTRUCTION PROGRAM FOR NEXT YEAR. STAGE ONE CONSTRUCTION WORK ON THE DAM WILL BE COMPLETED. THERE WILL BE CONTINUING WORK TO RELOCATE HIGHWAYS 40 AND 189 AND WASATCH COUNTY ROUTE A. FURTHER LAND ACQUISITION FOR THE DAM WILL BE CARRIED OUT. NEW CONTRACTS FOR STAGE II CONSTRUCTION ON JORDANELLE DAM WILL BE AWARDED. CLEARING WORK FOR THE JORDANELLE RESERVOIR WILL CONTINUE. ALSO, A CONTRACT WILL BE LET FOR THE REMOVAL OF TAILINGS AT MAYFLOWER.

MAJOR CONTRACTS WILL BE AWARDED NEXT YEAR FOR ALPINE AQUEDUCT REACH 2 AND THE REPAIR OF OLMSTED FLOWLINE WHICH ARE PARTS OF THE JORDAN AQUEDUCT SYSTEM. PRECONSTRUCTION ACTIVITIES WILL BE CARRIED OUT AT THE JORDAN FORD PUMPING PLANT. ALL OF THE ABOVE ACTIVITIES FALL UNDER THE MUNICIPAL AND INDUSTRIAL WATER SYSTEMS.

PROPOSED WORK ON THE COLLECTION SYSTEM FOR THE CENTRAL UTAH PROJECT INCLUDES MAJOR REHABILITATION ON THE DUCHESUE RIVER AREA CANAL SYSTEM. ALSO, THERE WILL BE MAJOR WORK AT UPPER STILLWATER DAM AND RESERVOIR, INCLUDING RIGHT ABUTMENT STABILIZATION, ROAD REPAIRS, AND THE RELOCATION OF UPPER STILLWATER CAMPGROUND. ROAD WORK IS ANTICIPATED AT CURRENT CREEK. AT STRAWBERRY RESERVOIR, THERE WILL BE NEW CONTRACTS FOR RESTORATION FOR NORTH FORK RIVER CANYON AND WEST SIDE ROAD SURFACING.

IT IS ANTICIPATED THAT OVER $20 MILLION WILL BE SPENT ON THE DIAMOND FORK CONVEYANCE SYSTEM DURING FISCAL 1989. THIS WILL INCLUDE MAJOR WORK ON THE SYAR TUNNEL. PRECONSTRUCTION ACTIVITIES WILL BE UNDERTAKEN ON THE UPPER AND LOWER DIAMOND FORK PIPELINES AS WELL AS AT MONKS HOLLOW DAM AND RESERVOIR.

ALSO, ADITS WORK WILL BE FINISHED AT THE DAM. ROAD WORK WILL BE UNDERTAKEN AT LAST CHANCE POWERPLANT AND ALSO CONSTRUCTION OF AN ACCESS ROAD TO THE FIFTH WATER AQUEDUCT AND THE PAVING OF THE DIAMOND FORK ROAD SYSTEM.

OVER $6 MILLION IS PROJECTED TO BE SPENT FOR VARIOUS IRRIGATION AND DRAINAGE SYSTEM PROJECTS INCLUDING THE COMPLETION OF THE ACQUISITION OF STORAGE RIGHTS FOR THE MONA DAM AND RESERVOIR. PRECONSTRUCTION WORK WILL BE UNDERTAKEN FOR MONA-NEPHI, WEST MONA PUMPING PLANT, MOSIDA PUMPING PLANTS, CANALS, AND LATERALS AND ELBERTA CANAL AND LATERALS. THE NEPHI-SEVIER CANAL AND SYSTEM DRAINS WILL BOTH START PRECONSTRUCTION ACTIVITIES NEXT YEAR.

FINALLY, MR. CHAIRMAN, MAJOR ACQUISITIONS OF WATER RIGHTS ON UTAH LAKE WILL CONTINUE.

THE BUREAU HAS SET FORTH A VERY AMBITIOUS CONSTRUCTION SCHEDULE FOR NEXT YEAR, BUT ONE WHICH IS WITHIN THE BUREAU'S CAPABILITIES TO COMPLETE. WE BELIEVE IT IS OF PARAMOUNT IMPORTANCE THAT THE CENTRAL UTAH PROJECT CONTINUES TO MOVE FORWARD TO HELP MEET UTAH'S GROWING WATER NEEDS.

I DON'T HAVE TO POINT OUT TO YOU, MR. CHAIRMAN, OR TO THE OTHER MEMBERS OF THE COMMITTEE THE CRITICAL IMPORTANCE OF WATER FOR A DRY STATE LIKE UTAH, BUT ALSO A STATE WHICH CONTINUES TO EXPERIENCE RAPID GROWTH IN POPULATION. THIS YEAR WE ARE EXPERIENCING A MUCH SMALLER SNOW PACK WHICH WILL CAUSE WATER SHORTAGES. IN ORDER TO PROVIDE FOR THE EVER-EXPANDING GROWTH IN OUR CITIES, IT WILL BE ABSOLUTELY NECESSARY THAT ADDED WATER IN THE FUTURE BE PROVIDED BY THE CENTRAL UTAH PROJECT. WITH THE INCREASED RESERVOIR CAPACITY TO STORE WATER AND THE ADDITIONAL WATER CONVEYANCE SYSTEMS THE CENTRAL UTAH WATER CONSERVANCY DISTRICT STANDS READY TO HELP MEET OUR STATES WATER NEEDS.

FINALLY, MR. CHAIRMAN, I AND OUR BOARD MEMBERS WOULD BE REMISS IF WE DID NOT EXPRESS OUR DEEPEST GRATITUDE FOR YOUR

HELP AND YOUR SUPPORT OVER THESE MANY YEARS. AGAIN, WE LOOK FORWARD TO OUR CONTINUING RELATIONSHIP WITH YOU AND YOUR SUPPORT AND THOSE OF THE OTHER MEMBERS OF THE COMMITTEE FOR OUR PROJECT THIS YEAR AND IN THE FUTURE. WE CONTINUE TO BE VERY APPRECIATIVE OF THIS SUPPORT.

STATEMENT OF THE UTAH BOARD OF WATER RESOURCES

On behalf of the Utah Board of Water Resources, I would like to express support for the President's proposed FY 1989 (U.S. Army Corps of Engineers Civil Works) budget of $7.8 million to the Little Dell Lake project.

The Board of Water Resources has worked for many years with the sponsors (Salt Lake County and Metropolitan Water District of Salt Lake) of this project to complete the planning, design and obtaining funding for the construction of the project. This is a critical project in Salt Lake County providing needed flood control protection and additional municipal water supply for this rapidly growing area of the State.

In 1987 the Board of Water Resources provided $1.5 million to the Metropolitan Water District of Salt Lake to assist in the construction of the project demonstrating strong state commitment. We encourage your subcommittee to support the President's budget requested on this very important project.

LITTLE DELL LAKE, UTAH

PREPARED STATEMENT

Senator HATFIELD. And we will also make the statement of the Metropolitan Water District of Salt Lake City a part of the record as well.

Thank you very much for your presence and I want to assure you again that when you make the effort and come to Washington for a hearing of this kind that it is very helpful and we honor your effort by thanking you for being here.

[The statement follows:]

Statement of the Metropolitan Water District of Salt Lake City

The Honorable Chairman Johnston and Subcommittee Members:

As General Manager of the Metropolitan Water District of Salt Lake City, it is a pleasure for me to be here today to briefly discuss the Little Dell Lake, Utah Project, answer any questions that you might have, and urge your support for the administration's funding request for FY 1989.

The project had been in the discussion stage between Salt Lake City and Salt Lake County as early as 1947. Serious discussions started concerning the flood control need right after the 1952 spring snowmelt floods wherein several million dollars in damages occurred to the businesses and residences along the 1300 South floodplain in Salt Lake City. The U. S. Army Corps of Engineers was asked to assist the local governments in designing the Little Dell Dam and Reservoir. Subsequently, the project was authorized by the Congress under the 1968 Flood Control Act and Water Resources Development Act of 1976.

The Corps of Engineers' original design of the project was for a 50,000 acre-foot reservoir. Preliminary design and site investigation continued until the spring of 1983 when the city was again hit with high snowmelt runoff which caused excessive flooding. A local engineering firm was engaged to study the project since the local sponsors were not in a position to build a 50,000 acre-foot reservoir. The reservoir was downsized to 20,500 acre-feet and the Corps subsequently agreed to design and build the smaller project.

On June 10, 1986, a Local Cooperation Agreement (LCA) was signed between the Corps of Engineers and the sponsors of the project—the Metropolitan Water District of Salt Lake City and Salt Lake County. This signing was significant in that it was one of the first federal dam and reservoir (flood control) projects in the U. S. to be constructed under the administration's new cost-sharing formula. Mr. Robert K. Dawson, Assistant Secretary of the Army for Civil Works, attended the historic signing ceremony in Salt Lake City. Under the cost-sharing formula, the federal government will provide 59% of the cost and the local sponsors 41%.

Funds were approved by Congress for a construction start in 1987 and State Highway #65 was relocated in 1987. Utilities, including oil pipelines and telephone lines, have also been relocated in preparation for the main dam construction. In May, 1988, the core trench and test fills contract will be advertised for bid by the Corps. The administration is requesting $7.8 million for FY 1989 to allow construction to continue. We urge your support for the FY 1989 funding.

Local funding is in place. The Metropolitan Water District of Salt Lake City has issued a revenue bond for $14.3 million and the money is in the bank to be expended as construction continues. Salt Lake County has set aside $4.1 million from its current revenue toward its share of $7.6 million. The State of Utah, Division of Water Resources, contributed $1.6 million in the form of interest rate buy-down.

Project completion is scheduled for the fall of 1991 and we would appreciate your continued funding of this very important flood control and water supply project.

Statement of Sponsors of Little Dell Lake, Utah, Project

Honorable Chairman Johnston and Subcommittee Members:

The local sponsors of the Little Dell Lake, Utah Project—The Metropolitan Water District of Salt Lake City, Salt Lake County and Salt Lake City Corporation wish to submit the following written statement in support of continued funding of the Little Dell Lake, Utah Project:

The sponsors are in unanimous support of the President's fiscal year 1989 budget recommendation to the Congress of the United States for funding of the project in the amount of $7.8 million. They have bonded and have made available their share of the project costs in accordance with the June 10, 1986, Local Cooperation Agreement (LCA) proposed Construction Funding Plan. The requested fiscal year 1989 appropriation will begin the construction of the main dam, outlet works tunnel and related appurtenances. Thus far, the project has moved forward on schedule with the relocations of State Highway 65 and utilities during the 1987 construction season. The dam core trench excavation and test fills will be completed during the summer construction season of 1988.

The Little Dell Lake, Utah Project is very important to the citizens of Salt Lake City and County as it will provide much needed flood control to Salt Lake City's 1300 South floodplain which has experienced two major floods in recent history and provides a drinking water supply to meet the growing demands of the Salt Lake Metropolitan area. The project was initiated after the 1952 spring snowmelt flood which inundated the 1300 South floodplain inflicting large scale damage and expense. The Army Corps of Engineers was asked to assist in controlling future floods and their recommendation was to construct the Little Dell Lake, Utah Project. Subsequently, the project was authorized by Congress under the 1968 Flood Control Act and Water Resources Development Act of 1976. The project moved ahead with site investigation and preliminary planning until 1983, when the area was again hit with high snowmelt runnoff which required extensive flood control efforts to avoid widespread flooding. As a result of this episode and through the resolve of the local sponsors and the assistance of the State's Congressional Delegation, the project was initiated on June 10, 1986, when the local sponsors and the Army Corps of Engineers signed the Local Cooperation Agreement in Salt Lake City.

The project is one of the first federal projects to be funded under the Administration's new cost-sharing program. At the Local Cooperation Agreement signing ceremony, Mr. Robert K. Dawson, Assistant Secretary of the Army for Civil Works, said that the Little Dell Lake, Utah Project is one of the first in the nation under the new cost-sharing program and was "...a model - a prototype - for future water resource development... It shows that water development can continue in the face of severe budgetary constraints." The local sponsors are proud to be part of this pioneering effort in water project financing with the federal government and urge Congress to continue to make this a "model" project by keeping funding levels adequate to complete the project on schedule and on budget.

The Metropolitan Water District of Salt Lake City has bonded for $14.3 million to finance the municipal water supply portion of the project and Salt Lake County has set aside $4.1 million from current revenues toward its share of $7.6 million. Salt Lake City donated the land. Additional funding was furnished by the State of Utah, Division of Water Resources, in the form of a $1.6 million interest rate buy-down contribution. Clearly, this is a project supported at all levels of government and will be extremely beneficial to the citizens of Salt Lake City and County.

Mr. Chairman and Subcommittee Members: The sponsors emphasize the importance of the adequate continued funding of the Little Dell Lake, Utah Project and express appreciation to Congress for its past support of this important project. We look forward to working closely with the Army Corps of Engineers in the completion of this "model" project.

STATEMENT OF THOMAS J. MURRAY, CONSULTANT, OREGON PORTS OF SIUSLAW AND NEHALEM, OREG.

ACCOMPANIED BY:

ELLIE DUMDI, CHAIRMAN OF THE BOARD OF COMMISSIONERS, LANE COUNTY, OREG., REPRESENTING THE PORT OF SIUSLAW, OREG.
ROCKY McVAY, COMMISSIONER, CURRY COUNTY, OREG.
STANLEY A. JUD, SECRETARY, PORT OF NEHALEM, OREG.
ZANE ZIEMER, PRESIDENT, PORT OF SIUSLAW, OREG.
WILBUR TERNYIK, VICE PRESIDENT, PORT OF SIUSLAW, OREG.
FRANKLIN E. KNIGHT, PRESIDENT, PORT OF NEHALEM, OREG.

Senator HATFIELD. I would like to now invite my panel from Oregon, Mr. Tom Murray, Commissioner Knight, Commissioner Ternyik, Commissioner McVay. If all of you would come forward for the record.

Mr. Murray, do you wish to begin by identifying the additional commissioners and others who are with you.

Mr. MURRAY. Thank you, Mr. Chairman.

To my immediate left is Ellie Dumdi, the chairman of the board of commissioners of Lane County; to her left is Commissioner Rocky McVay, Curry County commissioner; Commissioner Stanley Jud from the Port of Nehalem; Commissioner Zane Ziemer, Port of Siuslaw; our old friend, Wilbur Ternyik, Commissioner Port of Siuslaw; and my good friend, Franklin E. Knight.

Senator HATFIELD. I welcome each one of you. We are glad to have you here.

You may proceed as you wish.

Mr. MURRAY. We would like to ask three witnesses to testify on five projects.

We will begin with Commissioner McVay testifying on the Chetco River project, the Rogue River project, and the Port Orford project.

PORTS OF NEHALEM AND SIUSLAW, OREG.

The Commissioners from Nehalem and Siuslaw suggested that perhaps I could just, in a brief sentence, summarize those statements and ask that all of the statements be included in the record.

Basically, Nehalem and Siuslaw are back again supporting section 107 projects. Both of those ports have had support by the Corps; both of those projects are being held in abeyance pending environmental issues being resolved.

Other than that, Mr. Chairman, with your permission, let me defer to our representative from Curry County.

SOUTHERN OREGON COASTAL PORTS MAINTENANCE DREDGING

Mr. MCVAY. Mr. Chairman, my name is Rocky McVay. I am a fifth generation resident of Curry County, Oreg., and at present one of the three county commissioners.

Senator HATFIELD. How far does that go back when you say "fifth generation"?

Mr. McVAY. 1854.

Senator HATFIELD. 1854, that is remarkable.

How did you get there?

Mr. McVAY. Actually from Missouri and the Allegheny Trail and it took a generation or two to settle down.

Senator HATFIELD. There was no other way to get there.

Thank you very much for letting me interrupt.

Mr. McVAY. Curry County is requesting this committee to restore funding to the U.S. Army Corps of Engineers' proposed fiscal year 1989 budget for dredging the congressionally authorized navigation projects on the Rogue River and at Port Orford, or to reprogram funds within the Corps of Engineers' proposed fiscal year 1989 budget for the dredging of these two projects.

The Corps of Engineers' proposed budget eliminate funds for dredging of the ports at Gold Beach and Port Orford will choke off the use of these ports for all practical purposes.

The long-term economic base of Curry County, the opportunity for continuation of the current employment in the county, and many people will suffer catastophic losses, if the four following major federal proposals of the administration are not changed:

First, the U.S. Army Corps of Engineers' proposal to eliminate the dredging on the Rogue River and at Port Orford.

Second, the U.S. Forest Service's current proposal to reduce the long-term annual timber supply in the Siskiyou National Forest from which much of the forest products came for the original economic justification of the Chetco and Rogue River navigation projects.

Third, the U.S. Forest Service's proposal to leave large amounts of highly combustible fire-killed timber and snags unharvested following the major forest fires this past year in southern Oregon and northern California without opening up the commercial timberland area for access for future fire control or needed access for timber for mills in Curry County.

Fourth, the U.S. Coast Guard's proposal to cut the summer patrol lifeboat service on the Rogue River due to budget constraints.

The buildup of shoals that will develop without annual maintenance dredging coupled with the potential withdrawal of the Coast Guard summer patrol on the Rogue River will leave the area in the ocean off the Rogue River without timely assistance in preventing disasters and to save lives.

The nearest Coast Guard lifeboat assistance would be from the Chetco River Lifeboat Station, which is approximately 2½ hours away. The nearest Coast Guard helicopter assistance will be from North Bend, which is approximately 45 minutes away by air from the entrance to the Rogue River, and the cold ocean water claims lives in 20 to 40 minutes depending upon one's physical condition and whether or not they are protected by a lifejacket.

Attached to my statement is a letter to me from the U.S. Coast Guard Group Commander at North Bend, Oreg., dated April 6, 1988, stating that 36 boats and 69 people were assisted in last year's summer boating season.

Also attached is a letter from Oregon's Governor Neil Goldschmidt dated April 6, 1988, which states, "I am writing to inform you that adequate Army Corps dredging authority for Oregon ports is a major concern and priority of my office."

Further attached is a letter from Oregon's Fourth District Congressman Peter DeFazio to the editors of the the Curry County Reporter, dated April 6, 1988, which also supports the theme of the Governor's position and Curry County's.

In summary, the U.S. Army Corps of Engineers is proposing to close off access to two-thirds of Curry County from the west, and the U.S. Forest Service is proposing to close off access from the east.

Mr. Chairman, we have nowhere to turn but to Congress.

Thank you, sir.

[The statement follows:]

STATEMENT OF ROCKY MCVAY, COMMISSIONER, CURRY COUNTY, OREG.

Mr Chairman:

My name is Rocky McVay. I am a fifth generation resident of Curry County, Oregon, and at present one of its three county commissioners.

Curry County is requesting this Committee to restore funding to the U.S. Army Corps of Engineers' proposed fiscal 1989 budget for dredging the Congressionally authorized navigation projects on the Rogue River and at Port Orford, or to reprogram funds within the Corps of Engineers' proposed fiscal 1989 budget for the dredging of these two projects.

We support the $591,000 now budgeted in fiscal 1989 by the Corps of Engineers for Operation and Maintenance of the Chetco River navigation project.

Curry County, where the southern boundary is the Oregon-California stateline, is a somewhat isolated rural county of approximately 17,300 people located on the Oregon Coast. It has approximately 75 miles of the most scenic coastline in the United States. Land transportation in the county is served by a single U.S. Highway north and south with no east-west highway connecting to the valley region of the state and no railroad serving any of the three communities in the county.

The federal navigation projects at the three ports at Brookings-Harbor on the Chetco River, Gold Beach on the Rogue River, and at Port Orford, were established in the main, and justified essentially, for the outbound waterborne shipments of lumber products and to provide facilities for the commercial fishing fleets.

The Corps of Engineers' proposed fiscal budget eliminating funds for dredging the ports at Gold Beach and Port Orford will choke off the use of these ports for all practical purposes.

The long-term economic base of Curry County, the opportunity for continuation of the current employment in the county, and many people, will suffer catastrophic losses if the four following major federal proposals of the Administration are not changed:

1st -- the U.S. Army Corps of Engineers' proposal to eliminate the dredging on the Rogue River and at Port Orford

2nd -- the U.S. Forest Service's current proposal to reduce the long-term annual timber supply in the Siskiyou National Forest from which much of the forest products came for the original economic justification of the Chetco and Rogue River navigation projects

3rd -- the U.S. Forest Service's proposal to leave large amounts of highly-combustible fire-killed timber and snags unharvested following the major forest fires this past year in Southern Oregon and Northern California without opening up the commercial timberland area for access for future fire control, or needed access for timber for mills in Curry County, and

4th -- the U.S. Coast Guard's proposal to cut the summer patrol lifeboat service on the Rogue River due to budget constraints.

The build-up of shoals that will develop without annual maintenance dredging coupled with the potential withdrawal of the Coast Guard summer patrol on the Rogue River, will leave the area in the ocean off the Rogue River without timely assistance in preventing disasters and to save lives. The nearest Coast Guard lifeboat assistance will be from the Chetco River Lifeboat Station, which is approximately 2½ hours away. The nearest Coast Guard helicopter assistance will be from North Bend which is approximately 45 minutes away by air from the entrance to the Rogue River, and the cold ocean water claims lives in 20 to 40 minutes, depending upon one's physical condition and whether or not they are protected by a lifejacket. ATTACHED TO MY

STATEMENT IS A LETTER TO ME FROM THE U.S. COAST GUARD GROUP COMMANDER AT NORTH BEND, OREGON, DATED APRIL 6, 1988 STATING THAT 26 BOATS AND 69 PEOPLE WERE ASSISTED IN LAST YEARS SUMMER BOATING SEASON.

ALSO ATTACHED IS A LETTER FROM OREGON'S GOVERNOR NEIL GOLDSCHMIDT DATED APRIL 6, 1988, WHICH STARTS BY SAYING "... I AM WRITING TO INFORM YOU THAT ADEQUATE ARMY CORPS DREDGING FUNDS FOR OREGON PORTS IS A MAJOR CONCERN AND PRIORITY OF MY OFFICE." FURTHER ATTACHED IS A LETTER FROM OREGON'S FORTH DISTRICT CONGRESSMAN PETER DEFAZIO TO THE EDITORS OF THE CURRY COUNTY REPORTER DATED APRIL 6, 1988, WHICH ALSO SUPPORTS THE THEME OF THE GOVERNOR'S POSITION AND CURRY COUNTY'S.

In summary, the U.S. Army Corps of Engineers is proposing to close off access to two-thirds of Curry County from the west, and the U.S. Forest Service is proposing to close off access from the east. We have nowhere to turn but to the Congress.

The Corps of Engineers has not yet announced to us its capability of the amounts of funds that it could use for the dredging of these two projects in fiscal 1989.

In an enclosure with a letter to us of April 1, 1988, the Corps of Engineers' Portland District advises that the 5-year average annual appropriations for Operation and Maintenance (1983-1988, inclusive) on the Rogue River navigation project was $740,800, and the same 5-year average for Port Orford was $290,380.

The Corps of Engineers clearly admits that without annual maintenance dredging the port on the Rogue River at Gold Beach and the port at Port Orford will no longer be viable. This statement is varifiable in the two-volume economic analysis of economic benefits for Oregon Coastal navigation projects published just a month ago for by the Corps of Engineers' Portland District at a cost of approximately $100,000.

There are two major shoaling problems on the Rogue River requiring maintenance dredging: the ocean entrance channel and the channel into the enclosed harbor. The jet boat trips that originate in the harbor carry over 25,000 passengers a year to view the nationally known Wild & Scenic Rogue River.

The Corps of Engineers constructed a 3-pile dike system between the entrance jetties several years ago which was designed to reduce shoaling in the entrance of the boat basin. The first attachment to my statement here is a front-page photograph from the Curry County Reporter, Gold Beach, March 16, 1988, showing storm destruction on March 10, 1988, of one of the three dikes in this system.

The shoaling problem at Port Orford is the most severe of the three federally-authorized navigation projects in Curry County. One strong southwesterly storm will transport enough sand to choke off this harbor. The Corps of Engineers' 550-foot extension of the original breakwater constructed by local interests is recognized as the contributing factor to the trapping of sand which restricts commercial fishing vessels from using the harbor after such storms until it is dredged.

The recent analysis for the Corps of Engineers of Oregon Coastal navigation projects states that, "Without dredging, the turning basin would fill in to zero to plus three feet at mean lower low water."

The Corps of Engineers has recently completed an evaluation to examine the feasibility of a "sand bypassing system" to enhance the Corps' maintenance capability at Port Orford. The evaluation states:

> "7. At this time any alternatives selected for implementation should be considered as experimental in nature and not necessarily the final solution. It is not certain that the system would provide adequate depths throughout the winter season at an economical cost. Further, there are some questions concerning the survivability of some alternatives in the extremely adverse environment."

The devastating impact on the economy of Port Orford that would result form the elimination of dredging of the harbor by the Corps of Engineers is told in an editorial from the March 16, 1988, issue of the Port Orford News, a copy of which is attached to my statement. It points out that about 200 people would lose their jobs if dredging is discontinued. That is 20% of the population of Port Orford. The editorial concludes by saying:

> "We strongly urge the Oregon Congressional delegation to intercede in our behalf. We see it as their moral obligation to insure that local harbor maintenance funds be reinstated."

I carry this same plea to this Committee, not only for Port Orford, but for those in Gold Beach who will be adversely affected.

The $591,000 included in the Corps of Engineers' budget for Operations and Maintenance of the Chetco River navigation project appears to be adequate based on the past 5-year history of appropriations as advised by the Corps' Portland District office.

The Chetco River port facilities are generally open year-round but are faced with shoaling problems that result from the uneven jetty system at the river mouth, the south jetty being shorter than the seaward end of the north jetty.

The recently published analysis of economic benefits for Oregon coastal ports for the Corps of Engineers' Portland District contains the following statement which support continued annual Operation and Maintenance funding of this navigation project:

> "If the Crops of Engineers ceased their dredging operations at Brookings, it is estimated the entrance and access channel would fill in to 8 feet in depth, and the turning basin and small boat basin would completely fill in (Table 6A). This would dramatically reduce the number of fishing boats, fishermen, and landings at this port."
>
> "Commercial fishing is adversely affected by the narrower entrance channel caused by winter shoaling on the south side."
>
> "...the barge company serving Brookings, indicated that riskiness of bar passage and the moving of barges into port contributed to the recent closure."
>
> "Brookings is home to one of the largest permanent recreational boating fleets on the Oregon coast.
>
> "A total of 441 job losses result from reduced commercial fishing and occur across most of the species of fish and would impact the year round employment in the area fairly heavily."

The continuing buildup of sand shoals from winter storms; the cessation of outbound waterborne lumber movements from the three ports in Curry County; the upswing in commercial fishing, and the potential for greater tourist and recreational activities, make it imperative that the three federal navigation projects in Curry County be adequately maintained.

I appreciate the opportunity of the time and consideration given me by this Committee. Thank you.

Letter From Capt. D.O. Drake, U.S. Coast Guard

16100
April 6, 1988

Mr. Rocky McVay
Commissioner
Curry County Oregon
Board of Commissioners
Box 746
Gold Beach, Oregon 97444

RECEIVED
APR -8 1988
BOARD OF COMMISSIONERS
CURRY COUNTY, OREGON

Dear Mr. McVay:

I am writing in response to your letter of March 29, 1988, requesting statistics on the 1987 Coast Guard Summer Patrol at Gold Beach. The following is a summary of the information you requested:

a. Dates of Operation: May 23 - September 30
October 2 - October 15

b. Number of calls for assistance: 38

c. Number of boats assisted: 36

d. Number of persons assisted: 69

e. Property Assisted: $515,000

Please feel free to contact me if I can be of any further assistance.

Sincerely,

D. O. DRAKE
Captain, U.S. Coast Guard
Group Commander

LETTER FROM GOV. NEIL GOLDSCHMIDT OF OREGON

OFFICE OF THE GOVERNOR
STATE CAPITOL
SALEM, OREGON 97310-1347
April 6, 1988

Commissioner Rocky McVay
Curry County Board of Commissioners
Curry County Courthouse
450 N. Ellensburg
Gold Beach, OR 97444

Dear Commissioner McVay:

In response to your recent inquiry, I am writing to inform you that adequate Army Corps dredging funds for Oregon ports is a major concern and priority of this office. The Corps recommendation not to fund dredging for Fiscal Year 1989 at the Ports of Port Orford and Gold Beach is adverse to the economic well being of the Oregon Coast. A decision not to dredge these ports is a decision to close them to further economic activity. As a result, my office has taken some definitive steps to reverse these decisions.

Greg Baker, Manager of the Ports Division, Economic Development Department, recently visited Washington, D.C., for the purpose of coordinating our efforts with the Oregon Congressional Delegation. Subsequently, Port representatives have met with professional staff from the U. S. Senate Appropriations Committee. My office has also cooperated with State Senator Bill Bradbury's lobbying efforts. These collective efforts are both comprehensive and ongoing.

With regard to Port Orford, we are in the process of disseminating updated information on commercial activity at the Port to justify Corps dredging funds. I understand that the Port may receive these funds based upon this new information. In the case of Gold Beach, we are in the initial stages of information gathering. This effort, however, may require concerted Congressional lobbying.

I want to assure you that I support continued federal assistance to Oregon Ports. Federal assistance is fundamental to the vitality of our ports and therefore essential to the economic health of our State.

Thank you for your concern about these issues. I look forward to working with you in the future.

Sincerely,

Neil Goldschmidt
Governor

NG:dkc
4083S

c: Lt. General E. R. Heiberg
Senator Bill Bradbury

[Letter to the Editor, Gold Beach, Oreg., Apr. 6, 1988]

"Dredging Vital for Local Ports"

Congress of the United States
House of Representatives
March 31, 1988

Bob and Betty Van Leer
Editors
Curry County Reporter
P.O. Box 766
Gold Beach, Oregon 97444

Dear Bob and Betty:

I am outraged that the Army Corps of Engineers has cut all funds for dredging at the Ports of Port Orford and Gold Beach.

While it's true Congress mandated cuts in the Corps' overall budget, I don't believe that dredging and other essential Corps activities are areas that should be compromised. I voted against the reductions and I'm currently working with several other members of Congress to restore the Corps' budget.

Ports are the main arteries of our economy. Congress and the Corps cannot and should not allow them to be clogged with the silt of political expediency in the name of so-called deficit reduction. There are many other less essential and more wasteful programs that could have been cut.

I didn't approve of the cuts Congress made, and I have to question the assumptions the Corps used to make its decision to end dredging at Port Orford and Gold Beach. The figures the Corps used were nothing more than ill-conceived and arbitrary.

The Corps decided that any port that moved less than 1,000 tons in 1985 would not be dredged during 1988. 1985 was not an average year for any of Oregon's ports. The effects of El Nino and early fishing season closures mandated by the Pacific Fishery Management Council wreaked havoc on the average tonnage figures of virtually all West Coast ports.

I recently met in Washington, D.C. with top officials from the Corps and urged them to reconsider their decision – or at least to change the assumptions on which their decision was based.

At the meeting, I told Major General Sisinyak and Col. Gary Lord that without the Corps' maintenance program virtually all commercial and sport fishing would cease at Port Orford and Gold Beach. I also told them that historic figures from Port Orford and Gold Beach show growth potential and greater average tonnage figures than the 1,000 ton figure used by the Corps as a cutoff. And finally, I told them both Port Orford and Gold Beach have seen substantial growth since 1985, most of which was directly dependent on continued Corps maintenance.

By the end of the meeting, both the general and the colonel agreed to reconsider their decision. They are currently reviewing additional data provided by Port Orford and Gold Beach through my office. My staff and I are in virtually constant contact with the Corps to ensure they know the importance of dredging to our ports.

The cuts in the Corps' budget are yet another example of the need to reorder our national priorities and reform the federal budget process. Despite reports of fraud and excess at the Pentagon, we continue to increase the military's budget by billions of dollars every year. At the same time, we are significantly reducing funds for dozens of important domestic programs – including the Corps of Engineers. Enough is enough.

Sincerely,
PETER DeFAZIO
Member of Congress

[Article from the Port Orford News, Oreg., Mar. 16, 1988]

FROM THE SCRATCH PAD

By Paul Peterson

News last week that local dredging funds had been eliminated from the 1988-89 Corps of Engineers budget submitted to the president, only shows that the Corps really has no regard for its obligations and no concern for small ports. And to pick an arbitrary year (1985) and set an arbitrary tonnage cut-off on which to base their actions, is simply a clear case of forced double jeopardy on small ports, that clearly came out of the blue.

As we recall, part of the breakwater construction project program, back in 1968, was that the Corps of Engineers was obligated to maintain ingress, egress and a operating channel adjacent to the dock to insure the continued operation of the local commercial fishing fleet . . . and recreational boating. That program would, naturally, require a certain amount of dredging—by whatever method. No tonnage figure was mentioned.

The port commission has worked diligently to convince the Corps of the initial problem with shoaling beginning back in the early 1970s, and the Corps responded with a minimal dredging program (utilizing several methods) in lieu of the construction of an "east" jetty that the Corps itself felt would solve the shoaling problem. The Corps came to that conclusion after extensive harbor model studies at its Vicksburg, Miss., Waterways Experiment Station. To date, the Corps said it has spent a paltry $2,403,600 (in comparison to expenditures at other ports) to maintain local port operations.

That amount of money could have constructed that east jetty back in the early 1970s . . . and the shoaling would probably not exist today. Maybe that's belaboring an ongoing problem with the Corps but those are the facts. And it was the Corps' own decision to dredge instead of construct . . . because of their open harbor obligation to the port.

But obligations be hanged, the Corps says now. So it picked a year when fishing was down due to an El Nino and ODFW imposed quotas—that reduced tonnage—as a maintenance obligation cutoff point in order to pull local (and Gold Beach) dredging funds.

Why didn't the Corps select one of the years from 1978 through 1982 for its tonnage figure? More than likely because the average tonnage of 1,045 didn't fit its arbitrary tonnage figure and maintenance obligations would have to be met.

A good share of the local economy is dependent directly on continued use of the harbor for fishing operations. Currently there are 65 commercial fishing boats operating out of Port Orford, most of them with two-man crews. Premium Pacific Seafoods employs another 40-60 persons . . .for a total of around 200 pepole. And that's about 20 per cent of the city population.

Pulling the Corps maintenance program out of Port Orford means that eventually commercial fishing operations will come to a halt because of shoaling . . . and those people will be without any local means of economic survival.

We strongly urge the Oregon congressional delegation to intercede in our behalf. We see it as their moral obligation to insure that local harbor maintenance funds be reinstated.

IMPORTANCE OF RECREATION ACTIVITIES

Senator HATFIELD. Thank you.

Mr. MURRAY. Mr. Chairman, I believe that concludes the presentation of the Oregon coastal ports. Thank you, sir.

Senator HATFIELD. Are there any other comments from other members?

Mr. TERNYIK. I have one comment. You asked Rocky McVay how long he had been there and when he came there and, Senator, my great-great-grandfather was chief of an Indian tribe and we were there to greet him. [Laughter.]

Mr. MURRAY. That was Commissioner Wilbur Ternyik, Port of Siuslaw.

Senator HATFIELD. We are happy that you welcomed us, Wilbur, and your ancestors.

Let me ask one or two questions, because we will be meeting later this afternoon in my office and will go into further detail.

One of the problems that we have, Commissioner McVay, facing us at the moment is that the OMB has obviously not recorded, nor has it recognized, the benefits that are created from recreational activity, which—as you and I know—produces revenues for both the locals and state as well as federal taxable income. That means that there is an economic value there to be considered.

Could you give us a range or a ballpark figure, if not a precise figure, and perhaps you can supply one later, as to how much revenue are produced by your ports and county through recreation?

Mr. MCVAY. Mr. Chairman, I would like to provide that information later, accurately. I can say that the recreation use at the Port of Brookings down through the Chetco River, in the last 10 years, has had more bar crossing than any other port on the Oregon coast on an average.

I believe the river trips on the Rogue River will be drawn from the highway and tourist traffic. The Rogue services approximately 80,000

people a year, and I don't have the information on Port Orford, however, it is a highly used recreationally for diving.

Senator HATFIELD. There are big trips up the river, which you have to consider when allowing shoaling to build up. Now, the figure is over 25,000 people going up river, as I understand your figures, are for Gold Beach?

Mr. MCVAY. 25,000 trips or 25,000 people?

Senator HATFIELD. Would that fit with your figure?

Mr. MCVAY. It is not the figure that I recall. I recall a figure somewhere around 80,000 to 84,000 people a year.

Senator HATFIELD. Let's find out where the differential is.

If you could give us some estimates at a later time, perhaps, as to those revenues that are produced related directly to recreational activity.

I think we have to persuade OMB that there is a significant benefit to this type of activity and that it can be figured into the cost/benefit ratios and all the computations they make on the costs of dredging and maintaining those harbors. There is more than the commercial use those harbors—there are other products or services.

Now, Mr. Murray, you are complete on the ports of the south, what about the central coast?

Mr. MURRAY. We have, indeed, covered the south well.

I think the difference, if I might add to Commissioner McVay's statement, is some of the things that he has talked about are from the recreational vantage point—passengers needing the harbor itself—the others are loaded from docks outside the harbor on the river.

Mr. Chairman, Commissioner Ternyik is here and to his right is Commissioner Knight of Nehalem. They will be more precise.

Senator HATFIELD. How many times does this make for your appearance here, Commissioner Knight?

Mr. KNIGHT. This is my 17th.

Senator HATFIELD. Does anyone have more under his belt?

Mr. KNIGHT. Sir, before long we will be on a first name basis.

PORT OF NEHALEM, OREG.

STATEMENT OF F.E. KNIGHT, PRESIDENT, PORT OF NEHALEM, OREG.

Mr. Chairman, my name is F.E. Knight. I am president of the Port of Nehalem, Tillamook County, Oreg.

Port Secretary Stanley Jud and I are here to support the Corps of Engineers' fiscal year 1989 budget request for $14 million for funding section 107, small navigation projects at our port.

We have been here supporting these Corps of Engineers' annual requests for section 107 funds since the Portland District started its study for a relatively small channel deepening project on the Nehalem River to fully utilize the more than $12 million Congress appropriated to reconstruct the jetties at the river entrance.

The Corps' Portland District section 107 report has been inactive since late 1983. In the meantime, there has been long costly litigation that has led to favorable decisions in the Oregon Court of Appeals and

the Oregon Supreme Court, which should make possible the issuance of dredge and fill permits for a proposed major marina development.

This development is one of the principal reasons for and justification of the channel deepening proposed on the river. It is for this reason our statement again outlines our support for funding.

We would like to have the Congress urge the Corps to expedite these important economic development projects on the Nehalem River.

Mr. Chairman, the rest of the details are included in the statement, and in closing I would like to emphasize that the Port of Nehalem is very appreciative of your past cooperation and everything that you have done for us.

We realize that this is a minor consideration for all of the funding requests you have, but to us it is a major request, and anything that you can do to help us in expediting this, we really do appreciate.

Thank you.

[The statement follows:]

STATEMENT OF F.E. KNIGHT, PRESIDENT, PORT OF NEHALEM, OREG.

Mr. Chairman:

My name is F.E. Knight. I am President of the Port of Nehalem, Tillamook County, Oregon. Port Secretary, Stanley Jud and I are here to support the Corps of Engineers' fiscal 1989 budget request for $14,000,000 for funding Section 107 - Small Navigation Projects Not Requiring Specific Legislation.

We have been here supporting these Corps of Engineers' annual requests for Section 107 funds since the Portland District started its study for a relatively small channel deepening project on the Nehalem River to fully utilize the more than 12 million dollars Congress appropriated to reconstruct the jetties at the river entrance.

The Portland District's "107" report has been inactive since late 1983. In the meantime there has been long costly litigation that has led to favorable decisions in the Oregon Court of Appeals and the Oregon Supreme Court which should make possible the issuance of dredge and fill permits for a proposed major marina develoment. This development is one of the principal reasons for, and justification of, the channel deepening proposed on the river. It is for this reason our statement again outlines our support for the Corps "107" funding program. We would like to have the Congress urge the Corps to expedite these important economic development projects on the Nehalem River.

The real issue holding up this "107" study was the special-interest environmental groups' opposition to the proposed marina that would provide much of the economic justification for our proposed 8-foot channel deepening project. Except for one shoal area in the bend of the river, there is an 8-foot, or more, natural river channel year around.

The original dredge and fill permits requested of the Oregon Division of State Lands and the Corps' Portland District were denied by both agencies. The marina developer spent an inordinate amount of money to obtain qualified professionals who provided the data necessary for use in the favorable decisions of two Oregon courts.

Following the favorable Oregon Supreme Court decision, the marina developer applied for the second time to both the state and Portland District for a renewal of the dredge and fill permit. The Corps of Engineers returned the application nine days later.

The application for renewal of the Federal dredge and fill permit was made to the Portland District on February 3, 1987, and returned to the applicant by letter of February 12, 1987, stating that the Portland District could not accept the application as it felt no substantial revision had been made.

The major marina development and proposed channel deepening project on the Nehalem River constitute the most important economic development and job-producing project on the horizon for North Tillamook County.

After the long and costly delays which should be ended as a result of Court actions, these developments should warrant top level attantion to reduce further unnecessary expenditures of public and private funds.

We thank you for your generous assistance in the past, and for allowing us to come before you on issues considered comparatively minor to the national concerns before this Committee, but they are of critical importance to the economic and social wellbeing of the constituency we serve.

STATEMENT OF WILBUR TERNYIK, VICE PRESIDENT, PORT OF SIUSLAW

Senator HATFIELD. Thank you, Commissioner.

As I have observed over the years, sometimes the smallest projects are the most difficult. [Laughter.]

Mr. KNIGHT. I am beginning to agree with you.

Mr. TERNYIK. Mr. Chairman, my name is Wilbur Ternyik, and I am with the Port of Siuslaw.

Given all the witnesses you have here, and you are very familiar with our project, we have updated the information. We appreciate the support and I think we will have to go with that and have you enter my prepared statement into the record.

Thank you.

Senator HATFIELD. Thank you, Commissioner.

I always appreciate your brevity and succinctness.

We have one lady, Commissioner Dumdi, who I think ought to have some opportunity to say a word.

Mrs. DUMDI. Thank you, Mr. Chairman.

It is a pleasure to be here this morning, and I have come to support Commissioner Ternyik and Commissioner Ziemer in their requests for the Port of Siuslaw.

We appreciate your time and interest.

Senator HATFIELD. We appreciate your presence, too.

Are there any other comments?

Mr. MURRAY. No, sir.

Senator HATFIELD. Thank you very much.

[The statement follows:]

STATEMENT OF WILBUR E. TERNYIK, VICE PRESIDENT, PORT OF SIUSLAW, OREG.

Mr. Chairman:

My name is Wilbur Ternyik. I am Vice-President of the Commission of the Port of Siuslaw, Oregon. I am accompanied here today by Port Commission President, Zane Ziemer, and Mrs. Ellie Dumdi, Chairman of the Board of Commissioners of Lane County, the second largest populated county in Oregon.

We are here to support the Corps of Engineers' Fiscal 1989 budget request for $935,000 for Operation and Maintenance of the Siuslaw River Navigation Project and the Corps' proposed budget of $14,000,000 for funding under Section 107 - Small Navigation Projects Not Requiring Specific Legislation.

Operation and Maintenance funds for the Siuslaw River navigation project are more important than ever now. There is a scouring action in the ocean around the seaward end of the south jetty which has caused a sloughing off of the end of the jetty. This damage could cause a change in wave action at the river mouth and could impact vessel traffic and a much needed boat basin and harbor or refuge which has been justified in a "107" report by the Corps of Engineers, Portland District. The Port of Siuslaw if now working to resolve pending environmental issues and has a nationally known engineering firm conducting a first phase program for the development of the boat basin.

Maintenance of the Siuslaw River navigation project and completion of the proposed small boat basin will provide one of the most assured long-term and sustaining economic benefits to the the Central Oregon Coast. This is especially true with tourism, recreation and retirement living fast becoming the realistic future for our region on the coast.

We again extend our sincere appreciation for this Committee's generosity in recommending the Federal funding that has brought our Port District, Lane County, and its communities one of the most important public works projects of our time.

Thank you.

ELK CREEK LAKE, OREG.

Senator HATFIELD. Before calling our next panel, I want to make part of the record the prepared statement of the Rogue Basin Association on the Elk Creek Lake project.

[The statement follows:]

STATEMENT OF THE ROGUE BASIN FLOOD CONTROL AND WATER RESOURCES ASSOCIATION

PL 87-874 Final Phase- Elk Creek Dam

For the first time in over twenty-five years our organization will not be personally represented at Appropriations Committee hearings in Washington during the week of April 11, 1988. The reason: work stoppage but please read on.

This 3 part project planned for the Rogue Basin was approved by the Congress in 1962 and is now about 75% complete. Lost Creek and Applegate Dams are operating more successfully than our fondest predictions. With current drought conditions throughout Southern Oregon they provide the only hope for water needs in this area in the crucial months to come.

The final phase of the Rogue Basin Project is Elk Creek Dam on which construction was begun in 1986 using a new technique called roller compacted concrete in the construction. Despite excellent progress on the contract through 1986 and up to September 1987 the dam construction was halted because of a lawsuit brought by the Oregon Natural Resources Council. It had been turned down by Oregon's Federal Judge but on appeal to U.S. 9th Circuit Court of Appeals in San Francisco the decision was remanded. The project has been virtually shut down with only stock piling and site cleanup underway probably to be completed by late summer of this year.

The Corps of Engineers has been ordered to do additional environmental impact studies on the dam's potential for damaging fish and wildlife. Those studies are underway and it is for the continuation of that work that we support the President's Budget for 1989 which includes $1,900,000 for some engineering design and completion of the E.I.S. studies.

After 33 years of study, review and reworking by so many agencies on a project for which not a shovelful of dirt was

turned for dam construction until a multi million dollar fish hatchery designed to mitigate loss on all three dams was in place and operating, it is ironic to see work stopped on the better than half finished final phase of the project, for the sake of yet more study of fish! For several years fishery enhancement resulting from the dams already in place has returned record runs of anadramous fish on the Rogue River. Power production, almost an afterthought for such a long term project, is returning substantial amounts of money to the Federal Treasury and the other project purposes including recreation are totally satisfactory or beyond predicted outcome!

Widely supported by all segments of our southern Oregon communities the project was designed for multipurpose uses - flood control, municipal and industrial water, irrigation, fisheries, recreation to name the major ones.

It remains a sound, necessary and important work crucial to the people and governing bodies of this Rogue Valley. With the continuing support of Senator Hatfield and Congressman Bob Smith, as well as other members of Oregon's Congressional delegation we urge your favorable consideration of this request to continue funding the project so that studies can be expeditiously completed and work resumed with minimal delay.

Additional information or detail is available from any of our officers on request. Thank you for your attention.

COLUMBIA AND SNAKE RIVERS FISH BYPASS FACILITIES

STATEMENT OF MORRIS BRUSETT, CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

ACCOMPANIED BY:

TOM TRULOVE, VICE CHAIRMAN, NORTHWEST POWER PLANNING COUNCIL

S. TIMOTHY WAPATO, EXECUTIVE DIRECTOR, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

RANDY FISHER, DIRECTOR, OREGON DEPARTMENT OF FISH AND WILDLIFE

JOSEPH R. BLUM, DIRECTOR, WASHINGTON DEPARTMENT OF FISHERIES

Senator HATFIELD. I would like to invite the Northwest Power Planning Council to come forward, the chairman and each member.

Chairman Brusett, I am going to ask you to identify each of the members that accompanied you and other persons who are here for the record, if you will please.

We welcome each of you.

Mr. BRUSETT. Mr. Chairman, my name is Morris Brusett and I am chairman of the Northwest Power Planning Council.

On my right is Tim Wapato, who is the executive director of the Columbia River Inter-Tribal Fish Commission; on my immediate left is Tom Trulove, who is the vice chairman of the Council; next to him is Randy Fisher, director of the Oregon Department of Fish and Wildlife; and on the far left is Joseph Blum, director of the Washington State Department of Fisheries.

Senator HATFIELD. We are happy to have each of you here.

Mr. BRUSETT. To conserve time, Mr. Chairman, I will submit my full statement for the record.

Today, we would like to focus our oral testimony on the Corps of Engineers' budget for fish bypass systems to be installed at the federal dams on the Columbia and Snake River system.

The Council is seeking an additional $9.6 million in its fiscal year 1989 budget to speed installation and improvement of downstream bypass facilities for juvenile fish at six mainstem dams.

The Corps' budget request of only $2 million is substantially less than has been available in prior years. It essentially terminates funding for the continuing design and construction of bypass facilities.

As you know, mechanical bypass facilities including screens guard young salmon and steelhead away from the dam generating turbines and, thereby, reduce fishkill. The dams without screens to deflect fish away from their turbines will kill 10 to 30 percent of the young fish at each project.

Because fish go through a number of dams on their trip to the ocean, there is a significant cumulative loss. For example, if you started with 100 fish in the Snake River, over half would be killed due to turbine mortality by the time they got to the Bonneville Dam.

We believe that these mortality levels can be cut in half if we install adequate bypass systems at the dams. Until these bypass systems are installed, spills of water over the dams are used to enable smolts to move downstream. This interim spill solution, however, can be very expensive to the region because of the foregone hydroelectric generation and its associated power revenues.

To avoid costly spill and to implement a long-term solution we need to plan, design, and install bypass systems at the mainstem dams as soon as possible. These new and improved facilities are not inexpensive, but they are needed to fulfill a long delayed debt to the past.

The funds would be appropriated through the Corps of Engineers, but would be fully repaid with interest over the life of the facility by ratepayers in the Pacific Northwest. In other words, the appropriated funds would be reimbursed 100 percent by the region.

As we reported last year, a regional consensus has been hammered out among all the official groups in the region for an agreement on an expedited schedule to complete the bypass facilities by 1994.

In fiscal year 1988, Congress added $8.7 million for bypass facilities at five dams, with language that explained in detail how the funds were to be spent. The administration has delayed allocation of these funds.

Although I suspect the schedule has now slipped, we still strongly support completion of the bypass facilities as soon as possible.

The Corps of Engineers' fiscal year 1989 budget request includes no funding to continue to bypass facilities program, which Congress has supported with increased funds in each of the last 4 fiscal years. We will provide a line-item cost estimate by project for your consideration for the $9.6 million needed in fiscal year 1989. We urge that the funds be provided as specific line-item appropriations in order to emphasize the importance of these activities and to help ensure that the Corps obligates the funds which are appropriated.

We thank you for giving us this opportunity to testify on this matter and for your past support.

[The statement follows:]

Statement of Morris Brusett, Chairman, Northwest Power Planning Council

Mr. Chairman and members of the Subcommittee, my name is Morris Brusett, and I am chairman of the Northwest Power Planning Council. The Council was authorized by Congress in 1980 and created as an interstate compact by the states of Idaho, Montana, Oregon and Washington. Its purpose is to develop a 20-year regional electric power plan to ensure the Pacific Northwest an adequate supply of power at the lowest possible cost. The plan is designed to ensure that the region only acquires resources it needs and it acquires the least-cost resources first. The Council also was directed to develop a major fish and wildlife program to rehabilitate fish and wildlife resources which have been harmed by hydroelectric development in the Columbia River Basin.

We appear today to present testimony on the fiscal year 1989 budget requests of five federal agencies. These agencies are the Army Corps of Engineers, Bureau of Reclamation, Bonneville Power Administration, Federal Energy Regulatory Commission, and the National Marine Fisheries Service, which is within the jurisdiction of another appropriations subcommittee.

Our interest in these budgets stems from the fact that each of these agencies implements, funds, or regulates activities which are a part of the Council's Northwest Power Plan and Columbia River Basin Fish and Wildlife Program. Both the Council's power plan and its fish and wildlife program were developed under the mandate of the Northwest Power Act of 1980. In this Act, Congress provided direction and the framework for the Council as a policy and planning body to implement its actions through these federal agencies. The ability of these agencies to meet their objectives under the is tied directly to their funding levels and budget priorities.

Corps of Engineers

The primary focus of our testimony this year, as it was last year, is on the need to reduce salmon and steelhead mortality as these fish migrate down the Columbia and Snake rivers. To do this, we need additional funds to speed the installation and improvement of juvenile salmon and steelhead bypass systems at Corps of Engineers dams. Unfortunately, the FY 1989 budget request for the Corps of Engineers includes only about $2 million for a continuation of planning and studies of fish bypass facilities. Most of this funding, the Corps advises, is to continue studies on the fish screens at Bonneville Second Powerhouse. This FY 89 request is substantially less than has been available in previous years. It essentially terminates funding for the continuing design and construction of critical fish bypass and transportation facilities at the major federal dams on the Columbia and Snake river system.

These facilities are among the very highest priorities in the Council's fish and wildlife program. In the past, this subcommittee has provided valuable leadership and support for the fish screens, bypass, and complementary transportation facilities. Dams without screens to deflect fish away from their turbines will kill 10 to 30 percent of the juvenile fish at each project. Because fish go through a number of dams on their trip to the ocean, there is a significant cumulative loss. For example, if you started with 100 fish at the top of the Snake or Columbia River, over half would be killed due to turbine mortality by the time they got to the bottom dam in the system. We believe that these mortality levels can be cut in half if we install adequate bypass screens at the dams. Until these bypass systems are installed and successfully operated, spills of water over the dams must be used to enable smolts to avoid the turbines and move downstream. This interim spill solution, however, can be very expensive to the region because of the foregone hydroelectric generation and its associated power revenues. To avoid costly spill and to implement a long-term solution, we need to plan, design, and install bypass systems at all the mainstem dams as soon as possible. These new and improved facilities are not inexpensive, but they are needed to fill a long delayed debt to the past. It should also be noted that these facilities are part of the hydro portion of the projects and will be fully repaid by the region's ratepayers. In other words, the appropriated funds will be reimbursed, 100 percent, by the region. Right now, the bypass facilities vary from dam to dam. Some are considered state-of-the-art. Others are obsolete. Still other dams have no bypass facilities at all.

We need improved bypass facilities at Little Goose, Lower Granite, McNary, and Bonneville dams. We need new facilities at Lower Monumental, Ice Harbor, and The Dalles dams. These needs have been recognized by a coalition of fishery agencies, tribes, and utility groups. Bonneville Power Administration, the Pacific Northwest Utilities Conference Committee, the Public Power Council, the Columbia River Inter-Tribal Fish Commission, the Columbia Basin Fish and Wildlife Authority, and the Council all support the facilities. As we reported last year, these groups agreed to an expedited schedule for completing the facilities. Although this schedule now cannot be attained, this diverse group of interests strongly supports completion of the facilities as soon as possible.

Congress has strongly supported the fish bypass facilities in the past. In FY 1988, Congress added $8.7 million for fish bypass facilities at five dams: Little Goose, Lower Granite, Lower Monumental, Ice Harbor and The Dalles. Report language, which was repeated in the conference statement, explained in detail how Congress wanted the funds to be spent. In addition, Congress again expressed support for the fish passage program and instructed the Corps to place a higher priority in their budget process on these important activities. As you know, the Administration has delayed allocation of the FY 88 funds. Due to a lack of funds and the delay in release of FY 88 funds, the original schedule, hammered out by those in the region, may slip as much as four years for some facilities unless corrective action is taken in the future. We urge the Committee to take action in the FY 88 Supplemental Appropriations or in another appropriate bill, which will result in release of these appropriated funds.

The Corps of Engineers' FY 1989 budget request includes no funding to continue the bypass facilities program, which Congress has supported with increased funds in each of the last four fiscal years. Although the release of FY 88 funds affects the schedule and future funding requirements, it is clear that additional funds are required in FY 1989. We estimate that an additional $9.6 million in FY 89 will be required to continue progress on bypass facilities. We will provide a line-item cost estimate by project for your consideration. We urge that the funds be provided as specific line-item appropriations in order to emphasize the importance of these activities and to help ensure that the Corps obligates the funds which are appropriated.

Bureau of Reclamation

The Council has consistently identified the Yakima River Basin as a high priority for fisheries enhancement in the Columbia River Basin. The $7.4 million for Yakima fish passage facilities in the Bureau of Reclamation budget request appears sufficient for continuing studies and construction on the schedule developed by the affected parties. We urge the committee to support the level in the budget request.

The budget request also appears to be adequate for continuing the Yakima River Basin Water Enhancement Project studies and for the advance planning on the Umatilla Basin Project -- two important efforts to promote sound water use and fisheries enhancement. The Council supports the budget request for these two projects.

Bonneville Power Administration

The Bonneville Power Administration is the primary implementer of the Council's power plan and fish and wildlife program. The Council has reviewed Bonneville's FY 89 budget request and would like to comment briefly on it. The Bonneville budget for FY 89 has been shaped by the agency's difficult financial situation over the last two years. Poor market conditions in FY 86 and FY 87 resulted in sharply reduced sales to California utilities and lower revenues from the aluminum smelters. In an effort to assure recovery of costs in the face of these market conditions, Bonneville proposed a rate increase in its wholesale power rates for the FY 1988-1989 period. Bonneville raised its wholesale priority firm rates an average of 7.7 per cent. The final rate increase is below the 9.5 per cent increase proposed in March 1987 and well below the original 13.1 per cent increase announced in December 1986. The new rate structure, however, includes a "rate recovery adjustment clause" for possible adjustment in rates on January 1, 1989. At that time, rates could be adjusted downward with no floor or upward by as much as 10 percent.

In view of the uncertain revenue picture and in order to reduce the amount of the rate increase, Bonneville cut planned spending levels in FY 88 and FY 89. The reductions in spending and the gradual increases in the price of aluminum have improved the revenue picture for the last six months. In the first quarter of 1988, projected revenues declined due to low streamflows and this has increased concerns about the longer term impact of a continued low hydro system output. On the other hand, Bonneville is optimistic about increased sales to aluminum customers. Overall, Bonneville indicates that the improved revenue estimates will allow it to meet all financial obligations in FY 88 and FY 89, including repayment of funds to the U.S. Treasury.

The total Bonneville budget for FY 89 is now projected at $3.181 billion as compared to $3.145 billion in FY 88. Overall program levels increase slightly more than it first appears because there is a smaller amortization or principal payment on the federal debt in FY 89 compared to FY 88. The largest increase in spending occurs in the resource planning, acquisition, and oversight category. This program includes the debt service on the Washington Public Power Supply System nuclear plants 1, 2 and 3. It also contains an increase for the Hanford Generating Project, which is now being re-examined by Bonneville in view of the closure of the N Reactor. Reductions in the request are centered in the capital investment portion of fish and wildlife, conservation, and transmission programs.

Bonneville Conservation

The Council strongly supports adequate levels of borrowing authority so that Bonneville can pursue a diversified energy conservation capability building effort in all sectors of the region's economy. Such an effort would help ensure that cost-effective conservation resources would be available when needed by the region. Bonneville conservation spending should focus on resource opportunities that would otherwise be lost if not obtained early -- e.g., new building construction, where the energy savings can only be obtained when the building is built and it would not be as cost-effective to achieve the savings by retrofitting the building at a later date. These energy efficiency improvements are addressed in the model conservation standards required under the Northwest Power Act. Bonneville has responded to the Council's plan by lowering conservation acquisition over the last five years while maintaining funds for capability building for the future and for model conservation standard resources, i.e., lost opportunity resources.

For next year, FY 89, Bonneville proposes to allocate $60.4 million for energy conservation activities as compared with $80.2 million in FY 88. The Bonneville budget request proposes to reduce its FY 89 energy conservation budget by eliminating payments in January 1989, for the Residential Model Conservation Standards Program. The Council and many others in the region are opposed to this proposal and we have now reached agreement with Bonneville on the continuation of the MCS program. Bonneville intends to revise its budget in order to implement this agreement on MCS. We urge the Committee to agree with this increase in the conservation portion of the budget in order to continue the MCS program in FY 1989 and beyond.

Bonneville Fish and Wildlife

Bonneville allocates $35.3 million in FY 89 for fish and wildlife activities as compared to $39.7 million earmarked for FY 88. It appears that the proposed FY 89 levels will be adequate to implement the Council Fish and Wildlife Program.

In August of 1987, Bonneville, the Council, the Columbia Basin Fish and Wildlife Authority, and other interests developed planning targets for Fish and Wildlife Program implementation over the next five years. These funding estimates were designed to achieve the objectives of the Council's program. The FY 89 budget level for fish and wildlife is consistent with the total funding levels in the agreement.

Bonneville Undistributed Reduction

The FY 89 budget includes an undistributed or non-program specific reduction of $11 million to be applied against the capital program of $147 million. The capital program includes $33.4 million in

anticipated spending for conservation and fish and wildlife activities and $101.1 million for system planning and construction. In the appendix of the U.S. budget, this undistributed reduction is taken against the System Planning and Construction Program. In the Bonneville budget, however, it is emphasized that the reductions may be applied to conservation and fish and wildlife along with other capital programs. The Council is concerned about Bonneville's application of this undistributed reduction, if approved by Congress. We urge the Committee to ensure that this is applied equitably and that funds necessary to achieve a least-cost energy future and to protect and enhance fisheries are not reduced.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission's FY 88 budget request contains $30 million for hydropower regulation. This appears adequate to permit the continuation of cumulative impact assessments on fish and wildlife in river basins and for implementation of the new hydropower relicensing legislation under which the Commission will consider comprehensive plans such as that prepared by the Council. We support this funding.

National Marine Fisheries Service

Although it is not in the subcommittee's direct jurisdiction, we would also like to comment on the National Marine Fisheries Service (NMFS) budget. The Administration once again proposes to curtail appropriations for operating the Mitchell Act hatcheries. This includes 24 hatcheries that release 100 million juvenile salmon and steelhead into the Columbia River system. Together, they account for half the basin's production. They represent a long-standing federal commitment to help alleviate the adverse effects of water diversions, deforestation, hydroelectric dams and pollution. The estimated costs for operating and maintaining these facilities is just over $8 million. The Council joins the Northwest delegation in opposing these cuts.

Mr. Chairman, thank you for this opportunity to share our concerns with you. We appreciate this subcommittee's past attention to the needs of the Pacific Northwest. I would be pleased to answer any questions.

MAINSTEM FISH BYPASS
FY 1989

Activity	Location	Amount
Permanent gate raise modification	Little Goose	$500,000
Collection and transport facilities	Little Goose	$3,500,000
Permanent gate raise modification	Lower Granite	$500,000
Expansion of collection facilities	Lower Granite	$300,000
Longer screens – engineering and testing	McNary	$900,000
Holding and loading facilities – design	McNary	$300,000
Bypass system (screens, collection channel, flume, holding and loading)	Lower Monumental	$2,500,000
Continue design of bypass	Ice Harbor	$400,000
Continue design of bypass	The Dalles	$700,000
		$9,600,000

Mr. BRUSETT. With your permission, Mr. Chairman, the other members would like to make some very brief comments.

Senator HATFIELD. We are happy to hear from them.

Mr. TRULOVE. Mr. Chairman, I am Tom Trulove, vice chairman of the Northwest Power Planning Council, and I am here to report that the entire Northwest utilities community is strongly behind our efforts.

The Pacific Northwest Utilities Conference Committee is our Northwest regional association representing both public and private utilities plus the aluminum companies.

Quoting from the most pertinent parts of an April 7 letter to Chairman Brusett from their executive director Ann Wright, they say: "We support appropriations to be provided for the acceleration of new installation scheduling for in and around these bypass systems."

They also say, "We in the Northwest have determined that the accelerated program provides a unique combination of improved badly needed benefits for fisheries"—in fact, over eight times the benefits the existing program—"and is a best value for ratepayer investments."

They summarize by saying, "We are fully supportive of your efforts."

Thank you.

Senator HATFIELD. Thank you, Mr. Vice Chairman.

Gentlemen, anyone else?

Mr. WAPATO. Thank you, Mr. Chairman.

My name is Tim Wapato. I am the executive director of the Columbia River Inter-Tribal Fish Commission.

I remember on the earlier panel you had asked the question of how many years are in five generations. The Indians of the Pacific Northwest have been fishing in that river since time immemorial, anthropologists say at least 11,000 years. I made a quick calculation and found that is 333 generations. [Laughter.]

Senator HATFIELD. I don't think anyone can top you. [Laughter.]

Mr. WAPATO. The calculations, in testimony gathered by the Northwest Power Planning Council of the fisheries agencies and the tribes in the region, determined that salmon and steelhead production in the Columbia River totaled at least 10 million to 16 million before the building of the hydroelectric projects.

Today, production in the Columbia River is approximately 2.5 million salmon and steelhead, most of that is downstream from the Bonneville Dam. Five to 11 million adult fish are lost each year as a result of the hydroelectric projects.

They calculate that at least 140 million salmon and steelhead have been lost through the hydroelectric development, and have presently existing litigation privilege in the basin. The loss of those fish has, of course, had the greatest effect over the Indian tribes whose traditional fisheries are upstream from Bonneville.

We have been very supportive of the Northwest Power Planning Council's program to help build those particular upriver stocks, which, of course, is a matter of interest to the Canadian government also.

REGIONAL PROGRAM SUPPORT

We support and we have joined in the effort with the utility community and the Northwest Power Planning Council, with the fishery agencies in treating these unique situations, where we now have a very solid coalition of usually opposing interests in this effort to provide the bypass, and we seek your support as you have been supportive in the past on this.

Thank you very much.

Senator HATFIELD. Thank you.

Mr. FISHER. As Tim just mentioned, it is a unique situation where all the power folks and the fisheries agencies and the tribes agreed upon a project.

We also would like to add to that our own fisheries people at times who are fishing on the Columbia River in terms of recreational activities.

The Columbia River means a lot to us in the state of Oregon in terms of economics in that the fisheries are worth between $30 and $40 million annually. You add to that the Pacific stocks which are set for remuneration and you are talking in neighborhood of $500 million annual income, official income to the states of Oregon and Washington.

From my perspective it is just not official for our own folks, it is added to the economic benefits for the entire region.

This is the only solution, this particular bypass system, and we would hope that it would be done as soon as possible so that we can get on and not have the arguments that are taking place often.

Mr. BLUM. Mr. Chairman, I am Joe Blum, director of the Washington Department of Fisheries.

As you know, on this issue there is a major item of debate on how you do harvest management constraint solutions. One problem is the dams.

On the dam side, if you will, the real argument is how do you do passage having this harvest management in the ocean.

We think in the last several years, on the harvest management side, we have moved several thousand leaps forward. We have Pacific salmon trading with United States-Canada. This is really the harvest from Alaska on behalf of Canada, and the fish in the Columbia River system.

In addition, 11 years ago we had the Magnuson Act passed which gives us management constraints in the ocean. As recently as last Friday, the Pacific Fisheries Management Council under the Magnuson Act promulgated regulations for the 1988 salmon season in the ocean. We will not have in 1988 a summer tribal fishery in the state of Washington because of the desire of the managers to protect weak stocks of salmon around the coast and in the rivers. It is the first time that there has not been that summer tribal fishery.

We think this shows the commitment of the harvest managers to getting the job done and you can recognize the economic impact of not having that fishery or what it would mean to the coastal communities around the state.

We applaud you for your support in the past on these bypass issues, and ask that you continue that support in 1988.

Senator HATFIELD. Thank you.

I can assure you that we will.

USE OF 1988 APPROPRIATIONS

Let me just make one or two brief observations on issues relating to this program. We are confronted with, of course, a number of problems.

No. 1 is that the OMB has seen fit to allocate only about half of the amount appropriated, but what disturbs me is that they are using it in ways which do not really address the main problem, and that is to install fish screens and other methods of fish bypass.

What they are doing is using about $3 million or identifying about $3 million for barges to drop the fish rather than about $1 million that we envisioned when we first appropriated for fiscal year 1988.

In order not to give them justification for that, I wonder if there is any serious insurmountable problem that is created by the fact that some of the screens that have been installed are not working well.

SOUNDNESS OF FISH BYPASS PROGRAM

Is this the technology that we should pursue recognizing there is a variance from dam to dam, but is the basic plan a sound plan that we can continue to defend here?

Mr. WAPATO. Mr. Chairman, I will take a shot at that.

Yes; I think it is basically a sound plan and that bypass is the best method, given the significant presence of fish around the dam.

The problem we have had for a couple of years is that the most cost-effective way and the most beneficial way is to cut little badgers or traps in building the dam, but that has two major problems.

First of all, you can't get a significant number of fish to run the downstream migration.

Second, you run into a genetics problem with the fish. You are taking a good portion of the rivers and you cutting off the level of diversity. I think it is just the determined number of the transportation versus the bypass.

First of all, we hear that we need to provide bypass for fish, so again we acquiesce to the fishery management committees to bypass and now we are being told that bypass is an inefficient way and we should go to barging.

I think the technology has evolved. I think that some of the available channels ought to be and have been forced through FERC proceedings to install bypassing on the Columbia River and I think we are finding out that it is working.

Senator HATFIELD. We have the full $8.7 million under fiscal year 1988 and you have requested $9.6 million for fiscal year 1989.

COMPLETION SCHEDULE

What would be the length of time necessary to complete that program, if those full appropriated levels were utilized?

Mr. BRUSSETT. There was a plan estimating appropriations somewhere between $20 and $22 million, and the total of the time period is estimated to be 1994 that we plan to have the bypass installed. Of course, this was estimated last year.

Senator HATFIELD. Looking at the estimate made between 1988 and 1989, at about a $20 million level, you are saying 1994?

Mr. BRUSSETT. Right.

DROUGHT IMPACT

Senator HATFIELD. In the last 3 years, we have all been very much aware of the drought that we have been experiencing.

In fact, Mr. Jura, the director of Bonneville Power was here recently for a hearing to look at his fiscal year 1989 budget, and when you read your statement, Mr. Vice Chairman, it did seem to me again that we are looking at a situation that could come down to, in making an allocation to Bonneville Dam, the choice of having fish or having energy.

Would you make a comment or two as you see the seriousness of this drought impacting upon the current program, and why delays in that program are going to accelerate or accentuate or elevate that seriousness down the road as well?

Mr. BRUSSETT. Yes; I would be happy to do that.

It is a very serious problem and our folks in the Northwest think it matters enough.

Some places have seen very little drought, and there are some damages after they have soaked in that become much dryer than others. That is not fortunate to have to happen, but without adequate bypass, we will have to leave some more water in some reservoirs than others. That is a privilege we have had from reservoir storage to produce electricity next winter, when we really need it.

It appears to me that, if we don't have the bypass, we are going to have a situation where in some of the mainstem dams we will have to spread, rather than tending ones whose return is otherwise less.

I believe that if we have the bypass installed at all of our dams, we would be far less likely to have to spread around and use up considerable portions of our reservoir storage. Of course, keeping water in those reservoirs adds to the efficiency for fish in future years. We provide more than 1,000 over average, so it is nice to have a little extra water in storage to maintain those.

Senator HATFIELD. I just want to underscore that point. I know that the chairman's testimony has addressed very pertinent points on this problem.

I would like to include at this point an editorial from the Sunday Oregonian, dated April 10, entitled "Budget/Salmon."

[The editorial follows:]

[Article from the Sunday Oregonian, Apr. 10, 1988]

BUDGET SLAPS SALMON

Once again, the federal Office of Management and Budget has endorsed only half-measures by the U.S. Army Corps of Engineers to implement the regional strategy to improve salmon runs on the Columbia River. The release of $4 million out of $8.7 million appropriated by Congress means it will take longer than the region had hoped to obtain a full measure of protection for young salmon and steelhead migrating downstream through the network of federal dams.

In terms of the federal budget, the fiscal saving is minuscule, the potential benefit of the expenditure considerable. The sooner salmon and steelhead stocks are built up, the better the long-term prospects for this important, fragile fishery.

The holdup of more than half the appropriation for the migration improvements is a budgetary slap at the Pacific Northwest. What does it take to convince federal budget officials that the region has its act together? In this case it wasn't enough that the Bonneville Power Administration, the Corps of Engineers divisional office, state fish and wildlife agencies, Indian tribes and the Northwest Power Planning Council had agreed on an accelerated schedule to install bypass screens on dams lacking them. Even the $8.7 million would not keep the accelerated program on schedule.

The screens keep fish out of the dam turbines, which kill an estimated 15 percent of the fish passing through each one. Losing a significant percentage of the run at each dam has been a major problem in gaining the escapement of enough juveniles to sea to produce a healthy return run.

The goal of the regional agreement was to achieve a 90 percent survival rate through the network of dams. Corps officials estimate, perhaps optimistically, that the action authorized by OMB will mean a survival rate of about 70 percent, better by a lot than no improvement, but less than the goal that OMB should be supporting.

Once again, the burden falls on the Northwest congressional delegations, especially Sen. Mark Hatfield, R-Ore., and Rep. Les AuCoin, D-Ore., members of their respective appropriations committees, to pry more of the appropriation from OMB. Their job would be much easier if the budget office would recognize that there is an urgency to improving salmon and steelhead runs that is lacking from many public works projects: Dribbling money out does not buy economy, it buys instability.

This year-to-year battle could be avoided if the budget office would face up to the federal responsibility for the anadromous fishery endangered by the federal dams. Spending money appropriated in this year's budget is only part of the problem; President Reagan's budget for next year again neglects the Columbia River salmon and steelhead program, meaning another battle will be needed.

Senator HATFIELD. I hope that I will have a chance to give a copy of that to Mr. Miller as well.

It seems to me the key issue here is getting the release of the current funding. Let me ask you what Steve Crow is doing to get the release of that money from OMB? [Laughter.]

He is the man back there with the red face.

Mr. BRUSSETT. We really appreciate, Mr. Chairman, your letting us have Steve from your staff. He had been a great help, and we know that we can count on him to do what he can and you too.

Senator HATFIELD. I will help you in every way I can.

Thank you very much. All of your supporting statements will be made part of the hearing record.

[The statements follow:]

Letter From Al Wright, Executive Director, Pacific Northwest Utilities Conference Committee

April 7, 1988

Mr. Morris Brusett
Northwest Power Planning Council
801 S.W. Fifth Avenue
Suite 1100
Portland, Oregon 97204

Dear Chairman Brusett:

Due to pressing commitments here in the region, I regret I will be unable to accompany the Council representatives and the interested Northwest parties to Washington D.C. for the House and Senate appropriations hearings on April 11.

Please be assured that my absence in no way diminishes the continued and total support of the PNUCC membership for adequate appropriations to secure the installation of the remaining bypass systems at the Corps of Engineers dams on the mainstem Columbia and Snake Rivers. We support any appropriations that can be provided for the acceleration of the installation schedule for any or all of these bypass systems. In that regard, please feel free to use this letter of support in any of the appropriations hearings as you see fit.

For background to any appropriations committee members, the Pacific Northwest Utilities Conference Committee (PNUCC) is a Northwest regional association representing the three major customer groups of the Bonneville Power Administration. These are 1) the consumer-owned utilities of the Northwest, 2) the investor-owned utilities of the Northwest, and 3) the direct service industries.

PNUCC recognizes that full commitment of funds to complete the bypass system could be as much as $162 million appropriated between now and about FY 1994. We support this appropriation schedule.

In addition we support funding to accelerate the feasibility studies and design of fishery bypass facilities at Corps of Engineers dams on both the mainstem Columbia and Snake Rivers. This will allow the feasibility studies and designs to take place concurrently rather than consecutively and will thus reduce the overall implementation schedule by a number of years.

We in the Northwest have determined that this accelerated program provides a unique combination of improved biological benefits for fisheries (over eight times the benefits of the existing spill program) and a "best value" for ratepayer investments.

This "best value" results from the fact that the existing fish spill program considerably reduces available energy for BPA sales (estimated to be $27 million in 1985) which is greater than the ratepayers' obligation to repay the costs of the bypass facilities to the U.S. Treasury.

It is important to point out two significant facts regarding this request. First, the Northwest ratepayers through their support of this investment are meeting the Congressional mandate of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 to use Northwest ratepayer funds to protect, mitigate, and enhance the anadromous fish runs of the Columbia River. And, second, that given the present appropriation system used by the Corps of Engineers, repayment of this appropriation becomes an obligation on the Northwest ratepayer not the U.S. taxpayer.

There has been some discussion that funds for a portion of these bybass facilities come from direct appropriations through the BPA budget. The entire membership of PNUCC is strongly opposed to this proposal. The rules and procedures for appropriations and repayment of Corps of Engineers projects have long been established and implemented. We do not object to the Northwest ratepayer paying for projects that provide direct benefits to the ratepayer through normal and accepted procedures. However, new and special payment schemes will invite potential fiscal mischief given reduced budgeting

throughout the federal system. As The Bonneville Power Administration is experiencing major problems in controlling its expenditures, we do not need or want new avenues for uncontrolled financial drains.

We are pleased that the BPA customers can come to consensus with the fishery agencies and tribal organizations on the "best value" for ratepayer investment in Columbia River fishery programs.

Therefore, we are fully supportive of your efforts to obtain these Congressional appropriations for the Corps of Engineers.

Again I regret I will be unable to provide these comments in person.

Sincerely,

al wright

Al Wright
Executive Director

STATEMENT OF JOE BLUM, DIRECTOR, WASHINGTON DEPARTMENT OF FISHERIES

Mr. Chairman and members of the subcommittee, my name is Joe Blum and I am Director of the Washington Department of Fisheries. I would like to urge you to support the installation of fish bypass systems at Corps of Engineers dams on the mainstem of the Columbia and Snake Rivers. These hydroelectric projects kill hundreds of thousands of juvenile salmon and steelhead on their migrations to the ocean. The loss of these fish places a heavy burden on ocean fisheries that are already seriously restricted to reduce fish harvest. Coupled with our harvest regulations, juvenile fish passage at Corps dams must be improved so that runs may rebuild.

The fisheries managers in the Pacific Northwest have taken great strides in improving fisheries management to allow rebuilding of naturally spawning chinook and other salmon populations. Through processes established under the Pacific Salmon Interception Treaty, Magnuson Fisheries Conservation and Management Act, and other federal and state laws, the harvests of anadromous fish are carefully and prudently regulated for conservation and allocation purposes. This year, for instance, salmon harvests off the coast of Washington will be extremely limited due to the need to protect weaker fish stocks. We expect this year's restrictive harvest regulations to have significant negative impacts on Washington's coastal economies.

To allow our harvest management efforts to be effectively translated into increased harvestable populations, juvenile fish survival at mainstem Corps of Engineers' dams must be increased. This year we are asking for additional appropriations of $9.6 million to the Corps for mechanical fish bypass development. This money would be in addition to the $2 million presently requested by the Administration.

The additional funding will allow work to proceed at dams without bypass systems, in particular Lower Monumental, Ice Harbor, and The Dalles dams. Additional improvements will be made at existing systems so they may operate more efficiently. Specifically, we hope that in FY 1989 the Corps will complete gate raise modifications at Lower Granite and Little Goose dams, which are far behind schedule, proceed with the development of a prototype longer screen at McNary Dam, and also design improved fish handling facilities at McNary Dam.

STATEMENT OF RANDY FISHER, DIRECTOR, OREGON DEPARTMENT OF FISH AND WILDLIFE

It is a pleasure to appear and offer my views on a matter essential to rebuilding the Columbia Basin's salmon and steelhead runs. As you know, federal hydropower in our region has been very damaging to the fishery resource. We in the Pacific Northwest have an important stake in mitigating these impacts. Due to hydropower development the Northwest's salmon fishery is only a fraction of its former abundance. Nevertheless, the annual personal income derived from in-river commercial landings of Columbia Basin salmon is at least $30-40 million. Moreover, Pacific commercial salmon fisheries, to which Columbia River stocks significantly contribute, account for an estimated annual catch value in excess of $500 million. Without question, this resource is an essential part of our Northwest economies.

Through a coordinated series of major efforts, states, Indian tribes, federal agencies and others are moving forward to double anadromous fish runs in the Columbia and its tributaries with regional moneys. The region is protecting existing habitat, restoring degraded rivers and streams, building new hatcheries, and restricting fish harvests. In Oregon, for instance, the State has enacted laws that prohibit sacrificing any significant number of salmon or steelhead to future hydroelectric development. This policy is among the most protective of fishery resources to be found in the United States. Coupled with the efforts of Indian tribes and federal agencies, Oregon is also building salmon and steelhead hatchery facilities in the upper Columbia Basin. Likewise, we are improving natural production of salmon and steelhead with numerous riparian and instream habitat improvement projects.

The rebuilding efforts do not stop at Oregon's borders. Together with Washington, Idaho, Indian tribes, and federal agencies we are proceeding with plans -- subbasin by subbasin-- throughout the Columbia and its tributaries to set forth cohesive management strategies reflecting systemwide rebuilding objectives consistent with the Northwest Power Act and the U.S.-Canada Salmon Treaty.

Yet to realize the goal of doubling fish runs, the mortality of juvenile salmon and steelhead must be reduced at Corps of Engineers' dams on the mainstem Columbia and Snake rivers. Through the Northwest Power Planning Council, a body created by federal statute and the actions of Oregon, Washington, Montana, and Idaho, the Pacific Northwest has arrived at a consensus; fish bypass systems must be completed at the Corps dams. These mechanical screens safely divert the young salmon on their downstream migration away from the injurious effects of the dams' turbines. In fact, rebuilding fish populations that reflect a balance of naturally spawning and hatchery stocks in rivers like the Grande Ronde and Imnaha in Oregon, and the Salmon and Clearwater in Idaho may be impossible if fish passage improvements are not made at Corps dams, particularly including the installation of bypass systems.

The FY 1989 budget levels proposed by the administration are not sufficient to maintain the bypass construction schedule the region anticipates. In fact, the administration's budget would cause at least a one year lapse in the regionally anticipated schedule for bypass improvements at Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, and The Dalles dams. This lapse would add to existing delays that have put construction at several of these projects years behind schedule.

Thank you for the opportunity to address this matter. I look forward to providing the subcomittees with additional information.

STATEMENT OF S. TIMOTHY WAPATO, EXECUTIVE DIRECTOR, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

Thank you for this opportunity to appear and express the Commission's support for the installation of fish bypass systems at Corps of Engineers' dams on the Columbia and Snake Rivers. These systems will signifcantly reduce the mortality of downstream migrating salmon and steelhead in the Columbia Basin. These fish are highly valuable to the region and the nation as a whole. And, equally important, the Columbia's salmon and steelhead are a priceless resource to the Indian tribes of the Pacific Northwest.

Before the era of hydroelectric development, salmon and steelhead numbered at least 10 to 16 million adult fish produced each year from the tremendous habitat of the Columbia and its tributaries. Today, approximately 2.5 million salmon and steelhead are produced. As determined by the Northwest Power Planning Council at least 5 to 11 million adult fish are lost each year due to the development of hydropower in the Columbia River Basin. Cumulatively, at least 140 million salmon and steelhead have been lost due to hydropower development, and have not been replaced by existing mitigation programs in the basin.

The loss of salmon and steelhead has had the greatest effect on Indian tribes whose traditional fisheries are located in areas of the basin above the hydropower projects. For millenia, the traditional lifestyles of the Indians of the Columbia River centered on the availability of the fishery resource. The salmon and steelhead afforded and continue to provide a dietary staple and a source of commerce. Moreover, these fish are central to the cultural fabric of the Columbia River tribes.

Today, upriver runs of spring and summer chinook salmon, which at the turn of the century sustained the largest commercial fisheries recorded in the basin, are no longer sufficient to support <u>any</u> commercial fisheries. Moreover, the tribes must severely restrict their members from fishing for ceremonial and subsistence purposes on these runs.

In 1855, when the Columbia River tribes entered into treaties with the United States, they reserved more than the right to dip their nets into empty waters. The tribes reserved the right to <u>take</u> fish at their usual and accustomed fishing stations. These treaty fishing rights have been repeatedly affirmed by the United States Supreme Court. <u>See Washington v. Washington Commercial Passenger Fishing Vessel Ass'n.</u>, 443 U.S. 658 (1979).

Fifty years after the treaties were signed, giant fishing wheels displaced tribal fishermen from their usual and accustomed stations and virtually harvested all available fish. In an action brought by the United States to protect Indian treaty interests, the United States Supreme Court upheld the tribes fishing rights against the non-Indians' use of fish-wheels. <u>United States v. Winans</u>, 198 U.S. 371 (1905). On remand to the court of appeals, the Supreme Court contemplated removal of sufficient fish wheels to allow fish to escape to the tribal fisheries. <u>Washington v. Washington Commercial Passenger Fishing Vessel Ass'n.</u>, 443 U.S. 658, 681 (1979).

Now some eighty years later, the hydroelectric projects of the Columbia and Snake act like the giant fish-wheels of the turn of the century. However, the dams' most destructive action is not as the fish migrate upstream, but as the juveniles pass

downstream through turbines en route to the Pacific Ocean. Up to 30% of the juvenile fish passing through a turbine will perish. The cumulative effect of passage at eight hydroelectric projects results in very high rates of mortality to the downstream migrations.

To reduce the high levels of mortality of juvenile migrants, mechanical bypass systems at some dams deflect juvenile migrating fish safely out of turbine intakes to channels where they are carried safely around the dams. Yet, not all the Corps dams have bypass systems; these dams are Lower Monumental, Ice Harbor, and The Dalles. And, where bypass systems have been installed, improvements are available to greatly increase their operating efficiencies.

Under provisions of the Pacific Northwest Planning Act, Indian tribes, fishery agencies, utilities and federal agencies responsible for marketing power have agreed upon the installation of these devices to mitigate turbine mortality. The funding for this effort will be borne by the ratepayers of the region that have benefited from the dams' low cost hydropower. To achieve this end, however, Congress needs to support the appropriation of funds to the Corps of Engineers for this purpose.

GRAYS HARBOR, WASH.

STATEMENT OF HENRY E. SOIKE, EXECUTIVE DIRECTOR, PORT OF GRAYS HARBOR, WASH.

Senator HATFIELD. Now we have Mr. Hank Soike, representing the Port of Grays Harbor.

Mr. Soike, your full statement will be placed in the record, and you will be happy to know that I received a communication on behalf of this project from our old friend, Senator Magnuson.

From what I see, you still know how to bring the most influence to bear on this committee. [Laughter.]

Mr. SOIKE. I had the pleasure of visiting with Senator Magnuson a couple of weeks ago, and I want to tell you that he is fine. He is about ready to celebrate his 86th birthday.

I was amazed at how interested he continues to be in this area of the Congress, and he is standing and seemed to be really enjoying life.

Senator HATFIELD. Be sure to give him my warmest regards any and every time you see him.

Mr. SOIKE. I will do that.

Senator HATFIELD. He was my tutor, as you know, and showed me how to do things back here. I hope that I can be helpful.

Mr. SOIKE. Mr. Chairman, as you know, I am the executive director of the Port of Grays Harbor, which is Washington state's only deep water coastal port, and I am here today to strongly support $13 million in capability funding for a new construction start in fiscal year 1989 for the Grays Harbor navigation improvement project.

Our navigation facilities provide the access link between federal, state, and private timber resources and the Pacific Rim countries of Japan, Korea, People's Republic of China and, our newest foreign customer, Turkey. Grays Harbor is the largest timber exporting port in the United States.

In 1987, 74 percent of the vessels departing from Grays Harbor had sailing drafts in excess of the current project depth. By overdredging berth areas, accepting vessel delays, and sailing at maximum tide conditions, our pilots are able to move vessels with 34 feet of draft out of our existing 30-foot federal project.

However, we are not able to load to capacity the larger vessels with up to 38 feet of draft. These vessels must go to other ports to be topped off before going to the Orient. In addition, some of the larger vessels do not stop in Grays Harbor because of our shallow draft, but would stop if we had a deeper channel.

Grays Harbor is primarily an exporting port; 1987 was a record year with 4.6 million tons of cargo with an estimated value of $317 million. While our country still suffers from trade imbalance, Grays Harbor's activities continue to assist in reducing the deficit.

The Water Resources Development Act of 1986, Public Law 99–662, authorized the Grays Harbor project and made the Corps and the port financial partners in construction of this project. Although Public Law 99–662 authorized the Grays Harbor project at $95.7 million, the cost has been significantly reduced through detailed design studies conducted by the Corps to $69.3 million, with $22.9 million being the port's obligation as local sponsor.

STATUS OF LOCAL COST SHARING

The port executed a statement of financial capability and financial planning on March 31, 1988. This statement and plan summarizes our ability to pay our share of the project costs and has been included in the Corps' general design memorandum, which is scheduled for completion on June 30 of this year. A copy of this financial statement and plan is attached to my statement for the record. A draft local cooperation agreement has been prepared by the Seattle District of the Corps, and the port is prepared to sign that agreement.

To assist the port in meeting its local cost-sharing obligations, the state of Washington has appropriated $10 million, $5 million is now available in the 1988–89 biennium ending June 30, 1989. The additional $5 million will be available in the 1989–91 biennium.

In addition, the port is now levying a 9-year industrial development tax, with first collections being received in 1988. Cash reserves, required lands, easements, rights-of-way, relocations, and disposal areas, known as LERRD by the Corp; and general obligation bonds, if necessary, will supplement the state assistance and our tax levy to complete our local cost-sharing obligations.

By September 30, 1988, the port will have invested and completed acquisition or construction of the LERRD, at a value of $4.8 million.

On February 25, 1988, the Corps testified before the House Appropriations Subcommittee on Energy and Water Development and indicated that construction on the Grays Harbor project could start in fiscal year 1989 if the Corps' construction capability of $13 million was funded.

These construction funds would replace the proposed fiscal year 1989 budget request of $1,070,000 in general investigations funds for the Grays Harbor preconstruction engineering and design, which could be completed using the construction funds.

It is significant to note that if the construction funds are made available in fiscal year 1989, dredging could start in February 1989, 20 miles of the 24-mile project—from the open sea to existing public terminals, plus crab and fish mitigation—would be completed by the end of fiscal year 1989.

This dredging in fiscal year 1989 would provide increased vessel draft to four deep-water berths—three public, one private—which handled 52 percent of the Grays Harbor marine commerce in 1987. Construction of the remainder of the project, which involves modification or replacement of a railroad bridge and 4 miles of dredging to three other deep water berths, would continue in fiscal years 1990 and 1991.

Therefore, in conclusion, because the navigation improvements are sorely needed and long overdue; local cost-sharing funds are now available; all LERRD will be in place by September 30, 1988; the Port of Grays Harbor, as local sponsor for the Grays Harbor, Wash., navigation improvement project, is ready to sign an LCA with the Assistant Secretary of the Army; and the Corps has the capability of starting construction in fiscal year 1989; we respectfully request construction capability funding totaling $13 million be appropriated in fiscal year 1989 for the Grays Harbor project.

I thank you for the opportunity to testify.

Senator HATFIELD. I thank you.

Let me make just one observation. With the budgetary constraints that we are working in, as you are fully aware from your 20-plus years of hearing this before, it may make it difficult.

I say it may make it difficult to accommodate your request because this is a new construction start. There have been several theories and times it is a ploy to try to hold the budgetary levels down, but you have made a very good case for your project, and we certainly will give it very serious consideration within that context.

Let me ask you another question. Do I understand that this may be your last appearance in this particular role?

Mr. SOIKE. This will be my last appearance as the executive director of the Port of Grays Harbor. I official retire at the end of June, however, I have assured the commissioner of the Port of Grays Harbor that I will continue to seek funds for this project, if my services are required.

Senator HATFIELD. I wish you well, and you certainly have established a very excellent reputation over the years of coming here with dependable information and data.

Thank you, and good luck to you, Hank.

COLUMBIA BASIN PROJECT, WASHINGTON

STATEMENT OF BERNARD ERICKSON, PRESIDENT, COLUMBIA BASIN DEVELOPMENT LEAGUE

ACCOMPANIED BY:

CHAN BAILEY, EXECUTIVE SECRETARY
RICHARD ERICKSON, EAST COLUMBIA BASIN IRRIGATION DISTRICT
LEO THIEME, SOUTH COLUMBIA BASIN IRRIGATION DISTRICT
ROGER SMITH, SOUTH COLUMBIA BASIN IRRIGATION DISTRICT
ED SPAULDING, QUINCY-COLUMBIA BASIN IRRIGATION DISTRICT
RICHARD STEVENS, QUINCY-COLUMBIA BASIN IRRIGATION DISTRICT

Senator HATFIELD. Our next group represents the Columbia Basin Development League.

We are happy to welcome all of you this morning

Mr. ERICKSON. Mr. Chairman, I am Bernard Erickson, and I will be delivering the testimony we have today.

I am accompanied by irrigation district members, and I would like to introduce them: Richard Erickson, on my far left, from the East Columbia Basin Irrigation District; Chan Bailey from the Columbia Basin Development League, executive secretary; Leo Thieme from the South District; Roger Smith from the South District; and on my right is Ed Spaulding and Richard Stevens from the Quincy District.

Mr. Chairman, we respectfully and specifically ask for a $400,000 increase in the Columbia basin project irrigation facilities program for fiscal year 1989.

This is now a total of $3.93 million and it includes continued drainage funding that is so important.

This is a responsible request considering that the budget has been reduced from $7.5 million in 1986 to $3.9 million in 1989.

Why are we asking for this funding? We were very disappointed to learn that the fiscal year 1989 appropriation request for the Columbia basin project did not include funding for completion of the environmental impact statement. This impact statement was well on the way to being completed and work on the EIS, which started in 1985, was stopped in the fall of 1986 because it was apparent that the water use, efficiency, water marketing, system design, and development alternatives, which were the Bureau's new direction, were not being addressed to meet today's needs or economics.

A steering committee worked for 1 year to make a report that provided ideas and advice for evaluation during the EIS process. Those ideas closely paralleled the new direction the Bureau of Reclamation wishes to take, but without completion of this environmental impact statement the Columbia basin project will not be able to institute those ideas that show progressive and innovative water and land management, or in any future development using these existing facilities.

Today's policy of not conducting the Columbia basin project's environmental impact statement is wrong. Our efforts as a team on the local, federal, and state levels has gone into this statement.

The state of Washington has cost shared to the tune of $257,000 as of this date, and is prepared to cost share more than $45,000 to $50,000 ad-

ditional. A 1976 agreement between the United States and the state of Washington for construction of drainage facilities has never been fulfilled by the United States. The state of Washington has kept its part of the cost-sharing agreement and more.

We fail to understand why the Bureau of Reclamation will not appropriate the funds for the environmental impact statement when it is almost three-quarters complete at this date. It is tailored to match the new direction the Bureau wants to move in and the Congress has, in the past said, "Finish it."

The state of Washington is way ahead in its commitments and, again, it would be a tragic waste not to complete it at this late date of development.

We, therefore, respectfully urge this committee to recommend this $400,000 appropriation for fiscal year 1989, and to include with that appropriation funding the request that the Bureau of Reclamation complete the environmental impact statement in a timely and committed manner, hopefully by 1990.

I thank you for your past support in this matter and, Mr. Chairman and members of the committee, thank you for your time and listening.

Senator HATFIELD. Thank you very much.

Are there any other statements or comments you gentlemen wish to make?

[No response.]

Senator HATFIELD. Mr. Bailey, do you wish to have included in the record the letters attached to your statement which are addressed to the chairman of the House committee?

Mr. BAILEY. Yes; we do.

Copies of our testimony were sent from Washington state at the beginning of last week and I don't know why they didn't arrive. So, we would like to have that included in the testimony.

Senator HATFIELD. We will make that all part of the record here today when received.

Thank you very much.

[The statement follows:]

Statement of Chan Bailey, Executive Secretary, Columbia Basin Development League

We respectfully ask for a $400,000 increase in the Columbia Basin Project Irrigation Facilities Program for FY89.

The Bureau of Reclamation contracted with a consulting firm in 1985 for an Environmental Impact Statement that would consider alternatives for the unfinished portion of the Columbia Basin Project. It became apparent that the E.I.S. was not adequately addressing some items, including water efficiency, water marketing, new technology in delivery system design and operations or new on-farm irrigation technology. Also the alternatives proposed were not good realistic options. With urging of several local groups the Bureau of Reclamation put the E.I.S. on hold from September 1986 to September 1987. During that time a Steering Committee was formed to study the inadequacies. That committee, in cooperation with the Bureau of Reclamation, completed the report in September 1987. The report provided many innovative ideas and advice for evaluation during the final E.I.S. process. The Bureau of Reclamation is presently moving forward with inclusion of the report in the scope of the E.I.S.

In 1987 the Department of the Interior introduced a "New Direction" for the Bureau of Reclamation. While there were many things in the "new direction" we could not agree with, the steering committee report did parallel much of the resource management thinking outlined in the "new direction." The report delt with better water efficiency on the developed portion as well as the undeveloped portion. It recognized the effects, both positive and negative, on fish, wildlife and recreation created by water conservation. It suggested ways that water marketing could be used to establish more efficient use of water. It looked at realistic alternatives for development including conjunctive use of surface and ground water supplies and better use of existing facilities. It addressed the legal and institutional changes needed to encourage more efficient water management. It outlined proposals for new designs and operations to meet modern on-farm technology.

Now the Bureau of Reclamation has specifically cut the funding for the completion of the Environmental Impact Statement for Fiscal Year 1989. We fail to understand how the Bureau of Reclamation intends to follow its "new direction" on resource management when they refuse to complete an E.I.S. that is designed to look at the entire Columbia Basin Project with a new and innovative approach. The State of Washington has exceeded its cost sharing commitment and the Bureau needs to fulfill its obligation to the State and complete the E.I.S.

We urge this Committee to recommend a $400,000 appropriation for FY89 and to include in that appropriation funding an October 1989 deadline for completion of the E.I.S. The people in the State of Washington deserve to know the future direction the Project will take.

STATEMENT OF MERLE R. GIBBENS, SECRETARY-MANAGER, IRRIGATION DIVISION, SOUTH COLUMBIA BASIN IRRIGATION DISTRICT

The South Columbia Basin Irrigation District requests the Senate to increase the President's Fiscal Year 1989 construction budget for the Columbia Basin Project in south-central Washington by $0.4 M. This increase will result in a total Irrigation Facilities budget for the Columbia Basin Project in FY 1989 of $4.33M.

By comparison, the $4.33M requested for FY 1989 is 97% of the FY 88 budget request and 61% of the FY 1987 budget request. The level of request for capital improvements and additions to plant is necessary to "maintain" existing Project developed land status without any major set-backs.

The $0.4 M FY 1989 budget increase will allow for completion of the Environmental Impact Statement for continued Project development. To date, the State of Washington has contributed $257,000 towards completion of the EIS. To curtail work on the EIS at this time would be a considerable waste of expended human and financial resources. We look forward to the ultimate completion of the Columbia Basin Project as originally authorized and reauthorized by Congress on August 30, 1935--fifty-two+ years ago.

Your support of a $4.33M FY 1989 construction budget for the Columbia Basin Project Irrigation Facilities is encourged.

STATEMENT OF RICHARD B. STEVENS, PRESIDENT OF THE BOARD OF DIRECTORS, QUINCY-COLUMBIA BASIN IRRIGATION DISTRICT

The Quincy District is one of the three districts comprising the Columbia Basin Project and is responsible for delivering federal water to approximately 250,000 acres. It is appreciative of this opportunity to present testimony in support of the proposed Fiscal Year 1989 appropriation request for the Columbia Basin Project.

The District is pleased to note that the proposed budget request includes funds for continued drainage and supplemental construction. As you know, failure to construct adequate drainage facilities to drain irrigable lands seriously jeopardizes the ability of the District and its waterusers to pay the annual construction cost obligation owing to the United States.

The District is concerned, however, that the proposed budget does not include funds for completion of the Environmental Impact Statement pertaining to the completion of the Columbia Basin Project. Failure to complete the E.I.S. could result in the loss of the present withdrawal by the United States of water from the Columbia River for the second half of the Project.

In view of the expenditure of funds heretofore appropriated and expended for the completion of the E.I.S, it appears to be uneconomic to fail to proceed to completion of the E.I.S. This is especially true in view of the cost sharing heretofore expended by the State of Washington in support of the E.I.S. We respectfully urge that the sum of $400,000 be included in the proposed budget for completion of the E.I.S.

The District is supportive of the proposed Fiscal Year 1989 appropriation request but does urge that adequate funds be included in the budget to timely complete the E.I.S. pertaining to the second half of the Project.

STATEMENT OF TED G. OSBORNE, PRESIDENT, EAST COLUMBIA BASIN IRRIGATION DISTRICT

The East Columbia Basin Irrigation District requests that the Senate increase the President's proposed budget for the Columbia Basin Project for Fiscal Year 1989 by $400,000. This increase will result in a total budget for the Columbia Basin Project of $4,330,000. This amount compares favorably and responsibly with the $7,535,000 budgeted in 1986, $7,100,000 budgeted in FY 1987 and the $3,670,000 enacted in FY 1988.

The additional $400,000 is necessary to continue work on the Environmental Impact Statement studying completion of the Columbia Basin Project. The Commissioner of Reclamation has again elected not to include funding for work on the EIS in his budget request on the basis that the maximum amount of U.S.B.R. funding should be directed toward projects currently under construction. You'll recall that this was the situation last year and the budget the Congress enacted added funds to cover work on the EIS.

Delaying work on the EIS until all the Bureau of Reclamations's ongoing construction is completed will prevent the people in the Pacific Northwest from making an important natural resource decision. The soils and climate of the Columbia Basin Project area produce a tremendous diversity of crops when irrigated. The proximity of the Project to northwest ports offers a unique opportunity to increase crop exports. This opportunity may become even more attractive in the future if the gradual decline of irrigated acreage in the southwest and southern plains continues.

The Environmental Impact Statement, when completed, will measure the feasibility of this opportunity. At that time, the region and the nation will have the information needed to decide if the Columbia River water earmarked for the completed Project should be diverted to those lands, or if it should be put to another use.

The State of Washington has cost shared in the EIS up to this point and offered to cost share additionally if necessary. The State Legislature has agreed to keep the necessary water withdrawn from appropriation by others until the future of the Project is decided. These actions by the State indicate a resolve to reach a decision regarding the future of the Project.

We request the Senate include funding for this work in the FY89 budget and further request that the Commissioner of Reclamation be directed to complete the EIS in a timely manner.

PREPARED STATEMENT FOR THE RECORD

Senator HATFIELD. Without objection, we will also make part of the record a prepared statement from the Washington State Department of Wildlife which covers items of concern to them.

[The statement follows:]

STATEMENT OF RICHARD J. POELKER, SPECIAL ASSISTANT TO THE DIRECTOR, WASHINGTON STATE DEPARTMENT OF WILDLIFE

Mr. Chairman, members of the Committee, staff, and interested parties, I thank you for the Director of Wildlife, the people of Washington, and our wildlife resource for this opportunity to express our views relating to the restoration and enhancement of wildlife resources in the Lower Snake River area of Washington. The potential for enhancing both the wildlife resource and related recreational opportunities is tremendous and it is to this end we solicit your support.

The following information relates to funding of the wildlife components of the Lower Snake River Fish and Wildlife Compensation Plan (LSRFWCP). The Compensation Plan was developed to compensate for losses of fish and wildlife resulting from construction of 4 dams on the lower Snake River: Ice Harbor dam in 1962, Lower Monumental dam in 1969, Little Goose dam in 1970, and Lower Granite dam in 1975. This Plan was authorized by Congress in the Water Resources Development Act of 1976 (PL 94-507). In 1986, Congress approved certain modifications to the Compensation Plan in the Water Resources Development Act of 1986. While the fisheries components of the Plan have been highly successful, inadequate funding has resulted in little accomplishment for the wildlife component of the Plan. This testimony is in support of the necessary funding to achieve wildlife mitigation as expressed in the Compensation Plan. Specifically, $3.1 million in FY 89 to implement the agreed upon Game Farm Alternative as interim compensation and $15.3 million, incrementally funded through FY 89, 90, 91, and 92 for land acquisition. The Plan is approved. Suitable lands have been identified to meet acquisition goals within the Plan. These are realistic, achievable elements of the wildlife component, with willing sellers awaiting an adequately funded acquisition effort.

We feel the federal government has not met its obligations for wildlife mitigation on the Lower Snake River and it is appropriate that it meets these obligations. We have worked continuously with the Walla Walla District and North Pacific Division of the Corps of Engineers to obtain funding within the Corps budget. To date, we have been unsuccessful. The Corps has a formula for determining the cost of the Game Farm Alternative which has been approved by the OCE. We agree with that formula. The Walla Walla District, Corps of Engineers, and the Department have, using this formula, arrived at a revised estimate for the GFA based on current Treasury Bill interest rates, inflation rates and game bird costs. This consensus is contained in letters dated March 31, 1988 from the Walla Walla District and April 1, 1988 from the Department of Wildlife. Copies of these letters are included with this testimony. The Walla Walla District has not yet obtained approval of this revised estimate from the North Pacific Division or OCE. Recent land acquisition cost estimates of $15.3 million have been provided for the record by the North Pacific Division. We agree with those estimates.

We have been asked by the Corps to provide, by early May, updated hunter-use data estimates of monetary values to be received for both the GFA and the land acquisition. We will provide this. Past discussions with the Corps lead us to believe there is limited hope that wildlife needs on the Snake River will ever achieve sufficent priority for approval within OCE for inclusion in the Corps budget.

The value of wildlife resources and related recreation in the western states is apparently uncommunicable to headquarters. We need your assistance in appropriating these funds and designating, unequivocably, the purpose to which they shall be put.

Approximately 14,426 acres of land were inundated along 140 miles of river. Numerous islands were lost, including 48 larger than 5 acres in size. Of the total acreage inundated, approximately 1,123 acres were in high quality riparian habitat. The remainder existed as active or abandoned farms, weedy floodplain and sagebrush/rabbit brush/grassland cover types. Population

studies conducted by the Department identified total wildlife losses of 261,900 animals.

Wildlife compensation authorized by the Plan can be divided into three components: on-project habitat development, off-project land acquisition, and interim compensation.

Approximately 1,000 acres of habitat improvement have occurred on Corps of Engineers-owned property on the Snake River since 1980. This is less than 10 percent of the area lost to inundation. A table referencing specifics has been appended to this testimony. Management of these sites is currently in an operation and maintenance mode. Plans for additional on-project habitat development on a less intensive basis, while in development since the early 1980's, have resulted in little work taking place.

Off-project lands acquired in southeast Washington are designed to augment wildlife compensation activities on limited Corps-owned project lands. The purchase of 24,100 acres was authorized: 8,400 acres for upland game habitat; 15,000 acres for chukar hunting access; and 700 acres for fisherman access.

Approximately 3,900 acres of upland habitat have been acquired in a perpetual easement (one ownership) and have recently been developed. Less than 60 acres of fishing easement has been acquired. None of the chukar hunting access has been acquired.

In the fall of 1986, as mentioned earlier, the Department received authorization to purchase these lands in fee rather than easements--a much more acceptable program to landowners. One month later funding disappeared. To date, no funds have been made available.

The Department supports initial Corps analysis that provides for off-project land acquisition over a 4-year period. It is important to remember that Section 856 of the Water Resources Development Act of 1986 (P.L. 99-662) only provides five years for completion of acquisition following authorization and funding. Four annual allocations of $1.5-6 million, for a total of $15.3 million, which includes necessary administrative costs to accomplish the off-project acquisition will satisfy this portion of the LSRFWCP. One year will still be available for final acquisition activities and provide some buffer should the initial four-year acquisition schedule prove unrealistic.

Interim compensation was to compensate for wildlife losses during the acquisition and development of habitat over a 20-year period.

The original program was to release 20,000 pen-reared pheasants a year for 20 years to replace interim losses. In 1983, the Department of Wildlife and Corps jointly agreed and recommended that the program be changed to pay landowners to protect and/or establish habitat on their land to produce wildlife naturally. This change is referred to as the Game Farm Alternative (GFA).

In 1985, an agreement for a one-time payment of $2.125 million was not funded. Three years after this initial agreement, GFA costs were estimated by the Walla Walla District at $3.4 million. Today, as mentioned earlier, the Walla Walla District and the Department have arrived at a revised estimate of $3.1 million.

Attempts to achieve funding for the wildlife component of the Plan within the Corps budget have been largely unsuccessful. Recent efforts by the state's congressional delegation have indicated their support for this funding. The state and the Walla Walla District and North Pacific Division of the Corps of Engineers have worked together to arrive at consensus on the amounts needed.

The Department recognizes the difficulties faced by Congress and federal agencies, such as the Corps of Engineers, in addressing the many competing demands for federal dollars and is ready to work closely with you to achieve the necessary funding.

In summary, over 14,000 acres of wildlife habitat were inundated with dam construction on-project, only 10 percent have been replaced (approximately 1,000 acres) while off-project only some 16 percent has been achieved. Less than 10 percent of the agreed upon interim compensation has been achieved. A generation of wildlife-related recreation has been lost.

Funding of interim compensation, the Game Farm Alternative, at the revised estimate of $3.1 million will provide for enhanced wildlife opportunities through the next 18 years, while permanent mitigation is provided by completing off-project land and fishing easement acquisition through incremental funding of $1.5-6 million per year, for a total of $15.3 million, for both the Corps and Department acquisition efforts.

ENCLOSURE #1

SNAKE RIVER WILDLIFE COMPENSATION

FACT SHEET (April 1988)

PROJECT

Construction of 4 dams on the lower Snake River: Ice Harbor(1962), Lower Monumental(1969), Little Goose(1970), and Lower Granite(1975).

LOSSES

Approximately 14,426 acres were inundated along 140 miles of river. Numerous islands were flooded including 48 larger than 5 acres in size.

Of total inundated acreage, approximately 1123 acres were in high quality riparian habitat. The remainder existed as active and abandoned farms, weedy floodplain and sagebrush/rabbitbrush/grassland cover types.

Population studies conducted by the Department of Wildlife in the early 1960's were compared with a baseline evaluation conducted in the late 1970's and the following project-caused losses were determined:

Upland game (pheasant, quail, gray partridge, cottontail)	66,800
Chukar partridge	39,600
Mourning doves	14,400
Furbearers	13,400
Deer	1,200
Canada geese (gosling reared to flight stage)	600
Non-game birds (breeding)	33,400
Non-game birds (wintering)	92,500
TOTAL WILDIFE	261,900

MITIGATION

Fish and Wildlife Coordination Act (1958) required construction agencies responsible for project-caused wildlife losses to consult with state and federal resource agencies for mitigation/compensation needs.

The Water Resources Development Act (1976) authorized the lower Snake River Fish and Wildlife Compensation Plan (Comp Plan). This plan described wildlife losses caused by dam construction on the lower Snake River and recommended the following programs to achieve wildlife compensation:

On-Project Habitat Development

Approximately 1,000 acres of wildlife habitat has been developed along Corps of Engineer (COE)-owned property on the Snake River since 1980. These areas consist of several different habitat types. They are as follows:

AREA[a]	RIVER MILE	TOTAL ACRES	DEVELOPED[b] ACRES
ICE HARBOR DAM	9.7	-	-
Big Flat	13.8-18.0	832	261
Lost Island	22.5-24.5	162	44
Hollebeke	24.5-26.4	247	112
LOWER MONUMENTAL DAM	41.5	-	-
Skookum	47.2-50.7	764	49
55-Mile	55.0-56.2	271	133
LITTLE GOOSE DAM	70.2	-	-
Ridpath	76.0-77.4	64	24
New York Bar	80.0-81.5	210	91
Willow Bar	86.0-88.5	191	123
Swift Bar	94.3-96.5	344	112
LOWER GRANITE DAM	107.5	-	-
Chief Timothy	131.5-133.0	66	25
Wilma[c]	133.8-135.0	~100	35

STATUS: Currently in an operation and maintenance mode. The Corps of Engineers contracted with the Department of Wildlife to conduct this work between 1980 and 1986. In 1987 a private contractor began performing those duties.

Generally this effort has been very successful. However, poorly designed irrigation systems require elevated maintenance each year. A limited shrub and tree replacement program has failed to keep up with the 75% mortality of the 110,000 shrubs and trees that were planted during initial development.

Plans for additional on-project habitat development on a less intensive basis have been in the planning stages since the early 1980's. Very little of that work has taken place.

****

[a] All areas listed are irrigated except Willow Bar which is dryland. Dam locations have been included as reference points.

[b] The habitat areas listed have not been developed to full potential.

[c] Wilma no longer exists. It was used as a dredge disposal site in the winter of 1985.

Off-Project Land Acquisition

Lands acquired in S.E. Washington under this program would help augment wildlife compensation activities on limited Corps-owned project lands. The purchase of 24,100 acres was authorized; 8,400 acres for upland game habitat, 15,000 acres for chukar hunting access; and 700 acres for fisherman access.

STATUS: Approximately 3,900 acres of upland habitat have been acquired in perpetual hunting easement (one ownership) and have recently been developed. Less than 30 acres of fishing easement has been acquired. None of the chukar hunting access has been acquired.

In the fall of 1986 we received authorization to purchase these lands in fee rather than troublesome easements. This was more acceptable to landowners. One month later funding disappeared.

Interim Compensation

The original program was to release 20,000 pen-reared pheasants a year for 20 years to replace interim losses. In 1983, the Department of Wildlife recommended that the program be changed to pay landowners to protect and/or establish habitat on their land to produce wildlife naturally. The Corps agreed.

STATUS: Recommended program in 1983, negotiated budget in 1985, advised that funds were not available in 1986. Not included in FY 89 budget.

Other Mitigation-Related Activities

Notwithstanding that on-project lands available for habitat replacement are limited, the Corps sold two parcels of wildlife-designated lands.

In the winter of 1985, one of the intensively managed habitat sites (Wilma) was used as a dredge disposal site. Habitat developed 4 years earlier was destroyed and no interim or long-term mitigation has been accomplished for the loss of that site.

KEY POINTS

- 14,426 acres of habitat were lost with dam construction.
- On-Project: 1,000 acres (about 7%) has been replaced.
- Off-Project: About 16% of the goal has been achieved.
- Interim Compensation: Less than 10% of the goal has been achieved.
- Habitat has been destroyed a second time (Wilma site) without mitigation.
- Fee title acquisition is now possible.
- A generation of wildlife-related recreation has been lost.

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON 99362-9265

March 31, 1988

REPLY TO
ATTENTION OF:

Planning Division

Mr. Jerry Neal, Interim Director
Department of Wildlife
600 North Capitol Way, GJ-11
Olympia, Washington 98504-0091

Dear Mr. Neal:

This is in response to your letter of March 11, 1988, requesting information regarding the proposed funding of the Game Bird Farm Alternative (GFA) portion of the Lower Snake River Fish and Wildlife Compensation Plan. As you noted, the lump-sum payment of $2.125 million was negotiated between the Corps of Engineers and Washington Department of Wildlife in 1985. We recognize that the Department of Wildlife subsequently notified us that $2.125 million was not sufficient to accomplish the GFA (Bruce Smith letter, Dec 15, 1986).

This estimate and the method of developing the estimate were presented in Design Memorandum No. 20, Lower Snake River Fish and Wildlife Compensation plan; Game Bird Farm Alternative: Habitat Development, which has been approved by our higher headquarters. Subsequent estimates for this program were generated by my staff solely for internal budgetary purposes and have not been approved.

The $2.125 million lump-sum estimate for the GFA was based on the 1985 cost of rearing and releasing 20,000 game farm pheasants, the May 1985 interest gained from an 18-year U.S. Treasury Bill, and an extended inflation rate of 5.5 percent. We presently need your concurrence on a revised estimate based on present Treasury Bill interest rates, inflation rates, and current game bird costs. We estimate the costs to be $3.1 million.

As we mentioned in the meeting you attended here on February 10, 1988, additional information is needed regarding hunter-use days and appropriate monetary values expected to be received by the State of Washington through the wildlife land acquisition and GFA portions of the Compensation Plan. I understand that Mike Passmore of my staff has been working with personnel in your Spokane office to obtain these estimates by early May 1988 so that we may review economic viability for these activities of the Compensation Plan.

Please feel free to contact Mr. Michael F. Passmore at 509-522-6624 if you have additional questions regarding this important portion of the Compensation Plan.

Sincerely,

Richard M. Ely
Lieutenant Colonel, Corps of Engineers
Acting District Engineer

STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE
600 North Capitol Way, GI-11 • Olympia, Washington 98504-0091 • (206) 753-5700

April 1, 1988

Lieutenant Colonel Richard M. Ely
Acting District Engineer
Walla Walla District, Corps of Engineers
Walla Walla, WA 99362-9265

Dear Colonel Ely:

This is in response to your letter of March 31, 1988 in which you requested our concurrence with your current Game Farm Alternative (GFA) estimated cost at $3.1 million, and additional information regarding hunter-use days and appropriate monetary values expected to be received.

We concur with the current GFA estimated cost of $3.1 million. Bruce Smith and his staff will, in cooperation with your staff, provide the additional hunter-use and monetary value information.

This has been a long, complex process. It is not yet complete. We hope that the cooperation and concensus achieved today will generate the climate necessary within the Corps and Congress to achieve this critical funding.

Sincerely,

THE DEPARTMENT OF WILDLIFE

Jerry Neal
Interim Director

NEBRASKA WATER RESOURCE PROJECTS

STATEMENT OF J. MICHAEL JESS, DIRECTOR OF WATER RESOURCES, NEBRASKA; ON BEHALF OF KAY A. ORR, GOVERNOR

Senator HATFIELD. Next, we have Mr. Michael Jess, director of the Nebraska Department of Water Resources.

Mr. Jess, your entire statement will be incorporated into the record. If you will please proceed to highlight it or summarize it, we would appreciate it.

Mr. JESS. Thank you, Mr. Chairman. I am Michael Jess, and I am here on behalf of the Governor of Nebraska, Kay Orr. You indicated your receipt of my testimony, so I will just highlight it.

Basically, there are six items. Most of the items we want to include in this we feel the administration's budget recommendations to are not sufficient for the completion of those projects.

North Loup Project, Nebraska

The first project is the North Loup project. The recommendation of the administration is for $14,776,000 which would terminate construction on a portion of the project. Unfortunately, that would not terminate the construction in its entirety.

The Davis Creek Dam, the Elba and Fullerton Canals would not be constructed under that schedule, so what we are asking is that the Congress provide the necessary clarity to the Office of Management and Budget along with sufficient funding so that the entire project can be finished.

If that is not done, if the project stops as the administration recommends, it will only be some 60 percent completed and a large portion of the project—many farmers in that area who have worked for this project for over 30 years will effectively be left without the obligation that the federal government has made to them.

They have been very willing, over the years, to meet all obligations that the Bureau has made on them, and in our judgment it is time now for the project to be fully completed.

Prairie Bend Unit, Nebraska

The Prairie Bend project is one, and we are asking that $800,000 be appropriated for that project and that will allow for initial advanced planning efforts.

You may recall that the project has as its objectives not only supplemental water supplies, but also addresses the needs of environmental concerns, endangered species, and other migrating birds.

The ground water demonstration projects are all important—not only in Nebraska but in the Great Plains as well—as we, in our state and many other states, have consumed ground water largely for irrigation and industrial purposes those supplies have been depleted and, of course, they have been a necessary ingredient in the economic vitality of all of our states.

So, we are advocating the funding for the ground water recharge demonstration projects, which we hope will ultimately provide that technology now lacking which would allow us to recharge those aquifers with surplus water.

Platte River Demonstration Project, Nebraska

The Platte River demonstration project. Nebraska's Platte River Valley, I suppose, is like a lot of others; the appearance of floods erode away prime agricultural land. There is not a ready technology available in our state to solve these problems.

So, we are asking that $100,000 be appropriated for that project, bearing in mind that these are for demonstrations. These are to determine applicable technology that will be useful in the Platte Valley. Conventional benefits and cost in a demonstration project are really not applicable because although some of the experimentation may lead to failure, we certainly will be learning something from that failure.

We urge your funding of that project with the idea that benefits and cost are not necessarily an indicator of how a project should go forward.

This is a project that continues to be one that is confusing among federal agencies and is also confusing from the standpoint of federal and nonfederal cost sharing.

The Missouri River from the last dam along its course down to Ponca has eroded the banks. We are asking that your committee look into that. The approval of the $75,000, we think, is satisfactory, but we would ask to direct your attention to the cost sharing and to the confusion of the Corps of Engineers and the National Park Service on that.

Item six is a new start, and I was sitting in the back and heard your remarks about new starts. Nonetheless, ground water use in our state and over much of the west is very important to the state's economy.

Great Plains Chemical Leachate Research Facility

Over the course of time, improper and over use of agricultural chemicals and other chemicals have polluted some of our ground waters. It is not known in a highly technological fashion how those processes work or how cleanup might be accomplished.

So, our University of Nebraska is proposing the creation of a Great Plains chemical leachate research facility, which we hope will provide the technology that will be useful in the future in cleaning up aquifers that have ground water pollution.

I have with me, Mr. Chairman, Dr. Sperry from the university, that can go into that in more detail and it is my understanding that he has also prepared testimony for your committee.

Lastly, there are a number of ongoing Corps of Engineers' programs. We just want to bring to your attention the section 205 small projects flood control program.

We feel it has not been sufficiently funded in the past years. There are communities in Nebraska that could benefit from that program—DeWitt, Howell, and Verdigre.

Also, the emergency streambank protection program under section 14 of the Corps of Engineers, we would recommend funding above the President's $10 million.

The section 22 planning assistance program is another one where we would like to see more work done in Nebraska at a faster pace. Nationally, the Corps allocates on the average $300,000 per state, however, Nebraska is scheduled to receive just $100,000 of that.

As indicated, there is nearly half a million dollars worth of work that needs to be done, and we would request that the Congress instruct the Corps to review their allocation of money to the various states, particularly in view of the needs in Nebraska.

The last bunch that I have submitted to the committee, Mr. Chairman, are a number of projects that are proposed by the administration, and I am just calling your attention to those. The state of Nebraska is supportive of all of those.

Mr. Chairman, thank you for the opportunity to present our testimony. If you or your staff have questions, please contact me.

Senator HATFIELD. Thank you very much. Mr. Jess. We appreciate your traveling here to offer your testimony.

[The statement follows:]

STATEMENT OF J. MICHAEL JESS, DIRECTOR, NEBRASKA STATE WATER RESOURCES

Mr. Chairman and committee members, I am Michael Jess, Director of Water Resources for the State of Nebraska. My testimony is given on behalf of Kay A. Orr, Governor of Nebraska.

My purpose in appearing before you is to urge your support for several water resources projects needed in my state. In the interest of time, I will detail those where executive branch recommendations are not adequate or where special direction or urging should be given to the federal agencies. One other, the Northern Great Plains Chemical Leachate Research Facility, is a proposed new-start.

1. North Loup Project (Bureau of Reclamation)

Construction of the North Loup Project has passed the half-way point. The President has recommended expenditure of $14,776,000 for next fiscal year. Following completion of the Scotia distribution system, we understand the recommendation is based upon discontinuing further project construction.

With urging from the State and from many others, Congress last year appropriated funds for going beyond the ending point recommended by the Administration. Your body directed the Bureau to begin construction of Davis Creek Dam during FY 88. Currently, an ongoing dispute has sidetracked Congressional intent. Without the Davis Creek facility, the North Loup Project cannot be fully completed. Along with those amounts recommended by the President, we therefore urge sufficient funding and necessary legislative clarification for completing the Davis Creek Dam, the Elba and Fullerton canals, and all remaining project features. Since its inception over 30 years ago, local commitments and obligations have remained firm.

2. Prairie Bend Project (Bureau of Reclamation)

Nebraska is in support of expending $800,000 next fiscal year for the Prairie Bend Project. The funding will allow initial work on advanced planning. Work now nearing completion is essential for dealing with long-term water supply problems. Among the proposed project features are facilities to address environmental concerns for endangered species and for other migrating bird populations. State and local support has existed since initiation of the planning effort.

3. Ground Water Recharge Demonstration Projects (Bureau of Reclamation)

Continued efforts are essential to assure adequate ground water supplies in regions experiencing a declining water table. In many areas of the Great Plains, including Nebraska, ground water is practically the sole source of supply. Reliable, cost-effective methods for replenishing those supplies are essential to continued vitality.

The Bureau of Reclamation has selected two demonstration projects in Nebraska. Each project sponsor has indicated a willingness to carry its required share of expected costs. The President has recommended $3 million for funding in FY 89. We agree with that recommendation. In concert with progress made for each demonstration, however, Bureau officials should be encouraged to move beyond expected agreement negotiations during the fiscal year.

4. Platte River Bank Demonstration Projects (Corps of Engineers)

The byword for this project is "demonstration." Beyond your support for appropriation of funds needed for completion of studies and plans and specifications, clear direction to the Corps of Engineers is urged. Because they are intended to demonstrate applications of experience gained elsewhere, customary benefit and cost analysis is not appropriate. Instead of full-scale projects, these are intended to demonstrate technological innovation.

During FY 89, $100,000 is needed for development of plans and specifications needed for final designs and acquiring necessary land rights and easements. The local sponsor remains supportive and has fulfilled all of its obligations. I urge your support for the project and the appropriation.

5. Missouri River Recreational River (Corps of Engineers)

Since construction and operation of the Missouri River main stem dams, substantial bank erosion has resulted. Especially hard hit is the reach from Gavins Point Dam to Ponca. Construction of needed bank stabilization facilities is essential to halt the loss of valuable acres along the river. For next fiscal year, we urge approval of the President's recommended $75,000.

Beyond the need for funding is a need for clarification of federal responsibilities. Unclear authorities have created confusion between the Corps of Engineers and the National Park Service. In addition, conflicting

criteria exists for federal and nonfederal cost-sharing arrangements. Your committee and the full body are urged to adopt legislation which clarifies these uncertainties.

6. Northern Great Plains Chemical Leachate Research Facility (Bureau of Reclamation

Use of chemicals is an integral component in modern agricultural production. Herbicides, fungicides and pesticides are extensively used as a means to increase quality and production. Over and improper use, however, is a known cause of ground water pollution. The existence of leachate-contaminated ground water is well documented in Nebraska. A clear understanding of agricultural chemical movement and biodegradation is sorely lacking. As a result, precautionary measures to prevent pollution also are lacking.

The proposed facility would draw upon existing resources within Nebraska. An interdisciplinary team of scientists at the University of Nebraska would first develop a comprehensive, scientific understanding and then perfect needed predictive capabilities. Their efforts also will be applicable to conditions in surrounding great plains states. Estimated cost for the central facility and two satellite facilities is estimated to be $3.1 million. The University proposes a federal expenditure of $2.1 million; that amount would be matched with $1 million in nonfederal funds. We urge support of this proposal.

Next, I want to direct your attention to three ongoing programs administered by the Corps of Engineers. Some $30 million is recommended by the Administration for the so-called Section 205 Small Project Flood Control program. Experience shows that amount is not sufficient nationally for needed work in small communities like DeWitt, Howells and Verdigre, Nebraska. The Section 14 Emergency Streambank Protection program also needs additional funding above the President's $10 million recommendation.

The Section 22 Planning Assistance Program is intended to aid states in seeking solutions to water problems. Funding included in the Corps' overall budget and distributed internally to Corps Districts provides technical assistance to the various states. Although $300,000 is the maximum allocation per state, Nebraska is scheduled to receive one-third that amount during

FY 88. With some $455,000 in needed work, we request the Congress direct the Corps to allocate additional moneys in order to achieve more prompt assistance. Specific efforts will include investigating and resolving problems of streambank erosion and environmental concerns along the Platte and Missouri Rivers.

Finally, I want to call your attention to several projects and programs recommended to you by the Reagan Administration. Nebraska is supportive of these proposals:

Antelope Creek flood survey	$ 120,000
Farwell Unit drain construction	660,000
Gavins Point operation and maintenance	5,202,000
Harlan County Lake operation and maintenance	1,116,000
Loup Basin investigations	100,000
Missouri River Levee System study	50,000
Missouri River Levee operation and maintenance	2,610,000
Missouri River Kensler Bend operation and maintenance	48,000
O'Neill Unit investigations	600,000
Papio Project construction	3,547,000
Papio Project operation and maintenance	500,000
Salt Creek and Tributaries operation and maintenance	623,000
South Platte/Frenchman investigations	75,000
Wood River flood surveys	160,000

Mr. Chairman, thank you for the opportunity to present Nebraska's testimony to your committee. Should questions arise today or later, direct them to me.

PREPARED STATEMENTS OF SENATOR KARNES OF NEBRASKA

Senator HATFIELD. Before calling the next witness, I want to place in the record the prepared statements which Senator Karnes has submitted.

[The statement follows:]

STATEMENT OF SENATOR DAVID K. KARNES

I am pleased to submit testimony in support of funding for a number of water projects in the State of Nebraska to the Energy and Water Appropriations Subcommittee. Appropriations for water projects is of critical importance in Nebraska, and I wanted to let you know I support a number of projects under consideration for funding.

I believe that funding for energy and water programs should be viewed as an investment in the future. Water development is a long and cumbersome process, and we must be prepared to plan and act in advance of increasing needs for water. The prudent approach is to continue a comprehensive development plan across our state that meets our current and future needs.

And we, in Nebraska, are especially dependent on responsible and reliable water development projects to assist us in our chief industry--agriculture.

Several of my constituents have notified me of their intent to testify at the upcoming hearing. I would appreciate your careful consideration of the facts they will be presenting to the Subcommittee. Additionally, I request that you keep in mind my support for the following projects and associated funding.

Corps of Engineers
General Investigations

1. ANTELOPE CREEK, LINCOLN; Flood Damage Prevention - surveys: $120,000
2. WOOD RIVER, GRAND ISLAND; Flood Damage Prevention - surveys: $160,000

Construction, General

1. MISSOURI NATIONAL RECREATIONAL RIVER, NE & SD; Flood Control construction: $100,000
2. PAPILLION CREEK AND TRIBUTARIES LAKE; Flood Control - construction: $3,547,000

Operation and Maintenance

1. GAVINS POINT DAM, LEWIS AND CLARK, NE & SD; Multiple Purpose $5,202,000
2. HARLAN COUNTY LAKE; Flood Control - $1,116,000
3. PAPILLION CREEK AND TRIBUTARIES LAKE; Flood Control - $500,000
4. SALT CREEK AND TRIBUTARIES; Flood Control - $623,000
5. MISSOURI NATIONAL RECREATION RIVER; - $200,000

Bureau of Reclamation
General Investigations

1. LOUP RIVER BASIN STUDY; Investigation - $100,000
2. SOUTH PLATTE/FRENCHMAN PROJECT; Investigation - $75,000

Construction

1. FARWELL UNIT, (P-SMBP); Construction - $660,000

2. NORTH LOUP DIVISION, (P-SMBP); Construction - $14,776,000

3. O'NEILL, (P-SMBP); Construction - $600,000

Operation & Maintenance

1. NORTH PLATTE PROJECT; O & M - $17,000

I would bring to the Committee's attention the fact that the Office of Management and Budget has apparently adopted a policy by which it makes the final determination of whether or not funds shall be appropriated for individual projects. OMB has chosen to ignore the stated intent of Congress to make available $1 million to fund the Davis Creek section of the North Loup Project. OMB is taking the position that it may follow or ignore congressional intent as it pleases when that intent is expressed in report language.

Last year, I introduced and the Senate passed a floor amendment that made the $1 million available to begin work on the Davis Creek feature, the final portion of the previously authorized North Loup Project. During the conference on appropriations respecting energy and water projects, the project was addressed favorably. Report language was included in the conference report making the funds available.

Davis Creek and the remainder of the North Loup Project have enjoyed widespread support in Congress, in the Executive Branch, and in Nebraska for many years. Congressional intent to proceed with the project is and always has been clear. Yet, OMB has moved unilaterally to block funding for Davis Creek.

I feel that the OMB action usurps the congressional authority to fund authorized projects. I request that the Committee take steps to clarify the situation with respect to Davis Creek and water project funding generally. I ask that funding for Davis Creek be included in the bill language for the FY 1989 Energy and Water Appropriations Bill.

On other matters, I would like to express my support for other projects on which you are receiving testimony today. I support the request by Dr. Roy Spaulding, on behalf of the University of Nebraska-Lincoln, for $2.2 million to create the Northern Great Plains Agricultural Chemical Leachate Research Facility. Non-point source pollution is threatening water quality in many agricultural areas of the country. Unfortunately, we don't know nearly enough about process by which non-point source pollutants travel through various soil layers to reach groundwater. The first step for dealing with a problem is to understand it, and it would do so on a regional level. The Research Facility would be a major step forward in meeting this need. Considering the potential costs of cleaning up groundwater pollution, it could be one of the most cost-effective expenditures the Congress would make this year.

I support the request by the Central Platte Natural Resources District for $800,000 in advance planning funds for the Prairie Bend Project.

I thank the Committee in advance for its kind consideration of these issues and look forward to providing whatever assistance is necessary to secure funding for these projects.

NORTH LOUP PROJECT, NEBRASKA

STATEMENT OF MICHAEL SHAUGHNESSY, TWIN LOUPS RECLAMATION DISTRICT

ACCOMPANIED BY:
DONALD HUGHES, PRESIDENT, TWIN LOUPS RECLAMATION DISTRICT
DONALD E. KILDAY, PRESIDENT, TWIN LOUPS IRRIGATION DISTRICT
LEE SONDERUP, LOUP BASIN MANAGEMENT STUDY
JAMES VANDERLOOP, LOUP BASIN MANAGEMENT STUDY
ROGER HELLBUSCH, LOUP BASIN MANAGEMENT STUDY

Senator HATFIELD. I would like to now ask Mr. Michael Shaughnessy, representing the Twin Loups Reclamation District.

Mr. Shaughnessy, if you will introduce your colleagues and summarize your statement, we will conclude this part of the hearing.

Mr. SHAUGHNESSY. Mr. Chairman, with me today is Donald Hughes, president of the Twin Loups Reclamation District; and Donald Kilday, president of the Twin Loups Irrigation District.

Mr. Hughes will present the oral testimony.

Mr. HUGHES. Mr. Chairman, it is my privilege to represent not only the Twin Loups Reclamation District, but also the irrigation district to this committee today to give our request of continued support for the construction of the North Loup Division, Nebraska project.

I am here not only as the president of the Twin Loups Reclamation District, but also as a farmer who will benefit from the completion of the North Loup project to make this statement on behalf of both the reclamation district and our irrigation district.

The board of directors of the Twin Loups Reclamation District and Irrigation District, with all the people in our districts, wish again to express our sincere appreciation for your continued support of our North Loup project over these many years.

DAVIS CREEK DAM

We would be less than honest with this committee, however, if we did not express our concerns over delays in completion of the North Loup project. The contractor building the Scotia system, the only project feature currently under construction, plans to complete the Scotia system in 1988. We have been informed that right-of-way acquisition for the Davis Creek Dam, the next feature of the project to be constructed, has not begun despite the fact that this committee approved, and Congress appropriated, funds for this purpose in fiscal years 1987 and 1988.

We are also informed that it will take 9 months to purchase the necessary right-of-way for and award a construction contract to build the Davis Creek Dam once the process of acquiring right-of-way begins. This unnecessary delay may mean no progress at all during the 1989 construction season toward completion of the North Loup project.

The North Loup project has been endorsed by all seven presidents since 1954, starting with President Eisenhower and including President Reagan. This project has had the support of your committee and con-

gressional support since that time. state and local support has been and still is strong.

We have had no environmentalist groups opposing this project. With the wildlife habitat and enhancement features, increased camping and water-based recreation, a proposed fish hatchery, and other features, we have enjoyed the cooperation of parks, fish and game organizations.

The North Loup project, as authorized, is now over 60-percent complete today. Under authorized computation the North Loup project has direct cost to benefit ratios of 1.4 to 1, one of the Bureau of Reclamation's highest cost-benefit ratios.

Additional authorized indirect benefits brings these benefit ratios even higher. The repayment contract between the United States and the Twin Loups Irrigation District, executed in 1976, was amended in 1987.

The primary changes to the original contract are: (1) An increase in allowable expenditures by the United States to complete the distribution system; (2) an increase in the repayment by the irrigators; and (3) a decrease in the length of the development period.

All contractual obligations have been met in good faith by the district with the understanding such increases were required to assure us of a completed 53,000-acre project. The U.S. Government has already purchased 1,355 acres in the Davis Creek Reservoir area in conjunction with the construction of the Mirdan system, 1,960 additional acres are needed before construction of the Davis Creek Dam can begin.

In summary, the North Loup project has the strong support, excellent cost-benefit ratios, the district has met all contractual obligations, the data and design specifications are nearly complete. The major portion of the lands required for the Davis Creek Reservoir area have been purchased and the Bureau's construction supervision staff is in place.

Continued delay of construction of the Davis Creek Dam, a key project feature since conception, can only increase costs and inefficiency.

Mr. Chairman, we are grateful to you and to your committee for your past support of the North Loup project. We ask you committee's support in getting a contract for construction of the Davis Creek Dam awarded as soon as possible.

We again urge your continued support of the appropriation of $24,776,000 for fiscal year 1989 in order that the construction of the North Loup project can continue to final completion with the least amount of further delay.

I thank you, sir.

[The statement follows:]

STATEMENT OF DONALD E. HUGHES, PRESIDENT, TWIN LOUPS RECLAMATION DISTRICT

Mr. Chairman and Members of the Committee:

My name is Donald E. Hughes, President of the Twin Loups Reclamation District, I live in Scotia, Nebraska. With me today is Mr. Donald E. Kilday, President of the Twin Loups Irrigation District, also a farmer who will receive water from this Project when completed. We appear hereby today in support of the continued construction of the North Loup Division, Nebraska Project.

It is my privilege, not only as the President of the Twin Loups Reclamation District, but as a farmer who will benefit from the completion of the North Loup Project, to make this Statement on behalf of the Twin Loups Reclamation District and The Twin Loups Irrigation District.

Mr. Chairman, the Board of Directors of the Twin Loups Reclamation District and The Twin Loups Irrigation District, with all the people in our two Districts, wish again to express our sincere appreciation for your continued support of the North Loup Project over many years.

We would be less than frank with this committee however, if we did not express our concerns over delays in completion of the North Loup Project. The Contractor building the Scotia System, the only Project Feature currently under construction, plans to complete the Scotia System in 1988. We have been informed that Right-of-way acquisition for the Davis Creek Dam, the next feature of the Project to be constructed, has not begun despite the fact that this Committee approved, and Congress appropriated funds for this purpose in Fiscal Year 1987 and again in 1988. We are also informed that it will take 9 months to purchase the necessary Rights-of-way for and award a construction contract to build the Davis Creek Dam once the process of acquiring right-of-way begins. This unnecessary delay may mean no progress at all during the 1989 construction season toward completion of the North Loup Project.

Mr. Chairman, the North Loup Project has been endorsed by seven presidents, beginning with President Eisenhower and including President Reagan. This Project has had the support of your Committee and Congressional support since first being authorized in 1954. State and local support is very

strong. No environmentalist groups oppose this Project. With the wild life habitat and enhancement features, increases camping and water based recreation, a proposed fish hatchery, and other features we have enjoyed the cooperation of Parks, Fish and Game Organizations.

The North Loup Project, as authorized, is over 60% complete today. Under authorized computation the North Loup Project has direct cost/benefit ratios of 1.4 to 1, one of the Bureau of Reclamation's highest cost/benefit ratios. Additional of authorized indirect benefits brings the benefit ratio even higher. The Repayment Contract between the United States and the Twin Loups Irrigation District, executed in 1976, was amended in 1987. The primary changes to the original contract are:

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In summary, the North Loup Project has strong support, excellent cost/benefit ratios, the District has met all contractual obligations, data and design specifications are complete, a major portion of the lands required for the Davis Creek Reservoir Area have been purchashed, and the Bureaus' construction supervision staff is in place. Continued delay of construction of the Davis Creek Dam, a key Project Feature since conception, can only increase costs and inefficiency.

We are grateful to you, Mr. Chairman, and to the Committee for your past support of the North Loup Project. We ask your Committees' support in getting a Contract for construction of the Davis Creek Dam awarded as soon as possible. We are again urging your continued support of the appropriation of $24,776,000 for Fiscal Year 1989 in order that the construction of the North Loup Project can continue to final completion with the least amount of further delay.

Senator HATFIELD. Thank you very much, Mr. Hughes.

Do you wish to introduce further colleagues who have joined you at this point, please.

Mr. SHAUGHNESSY. Thank you, Mr. Chairman.

Briefly, the other gentlemen with me this morning are: Lee Sonderup, president of the Cedar Rapids Reclamation District; Roger Hellbusch, a director; and Jim Vanderloop our secretary-treasurer.

Mr. Chairman, on their behalf, I submitted a statement to the committee and I would like to summarize that statement just for a moment.

It relates to a request for continued funding for the Loup basin management study that commenced 3 years ago and the funds are now necessary to continue that study.

Last summer, we signed a planned study and memorandum of understanding, and the memorandum of understanding emphasized that the Cedar River basin study—that a studyof the Cedar River basin will be emphasized.

We are gathering data; we do hope to provide the necessary information to commence an irrigation project in our Cedar River basin. We are cost sharing in that study with the federal government and with the state of Nebraska, who has provided funds through the Nebraska Natural Resources Commission, and we would ask that funding be continued this year and beyond to study our entire river basin.

Mr. Chairman, that concludes our remarks and I appreciate your time this morning.

[The statement follows:]

STATEMENT OF THE CEDAR VALLEY RECLAMATION DISTRICT, NEBR.

My name is Michael J. Shaughnessy of St. Paul, Nebraska. I am an attorney, and I represent the Cedar Valley Reclamation District. I present to you this statement as written testimony on behalf of the Cedar Valley Reclamation District to request an appropriation of $100,000 to continue funding of the Loup River Basin Management Study.

The Cedar Valley Reclamation District is the sponsoring entity for an irrigation project in Central Nebraska located in the Cedar River Valley. Briefly, the proposed irrigation project would consist of a dam and reservoir near Spalding, Nebraska, and irrigate approximately 23,000 acres in the Cedar River Valley through gravity irrigation. The Cedar Valley Reclamation District is also the sponsoring authority for the Loup River Basin Management Study.

The District, together with the Bureau of Reclamation, and other State Agencies are cooperating in the Study. The Bureau of Reclamation has commenced the study in the Cedar River Valley.

As this Committee knows, funding for the Study was approved 3 years ago, and funds are now necessary to continue the Study.

The Loup River Basin in Nebraska is a major water source for Central and West Central Nebraska. The Cedar River is a tributary of the Loup River. The Cedar River begins in the Sandhills of Nebraska, and flows into the Loup River near Fullerton, Nebraska.

A Plan of Study and Memorandum of Understanding was finalized on July 6, 1987 with the three study partners, the Bureau of Reclamation, The Nebraska Natural Resource Commission, and the Cedar Valley Reclamation District. The Memorandum of Understanding states that analysis of The Cedar River Basin will be emphasized in the first 2 1/2 years of the study.

Coordination meetings and activities to coordinate data gathering and analysis and to update the sponsors on the study's progress have been held with the 3 study partners. Data gathering and analysis has started on determining water supply and availability; studying management alternatives for water, land and ecological resources; and identifying the most economical and socially acceptable management alternatives for those resources. The cost estimates for the Cedar Rapids Project have been updated and hydrologic and land use data has been updated from Nebraska Natural Resource Commission and Soil Conservation Service data in Nebraska's data bank. The Loup Basin Study results will include inventories of irrigated land, wet meadows, dryland crop ground, and many other items. Existing and potential water supply and quality problems and alternative solutions will be analyzed and displayed.

The Memorandum of Understanding shows funding from Federal funding, in-kind services by the Nebraska Natural Resource Commission and cash by the Cedar Valley Reclamation District. Total expenditures by the Bureau of Reclamation to date is $79,389.

Fiscal Year 1987 Program	= $ 42,821	(Actual Expenditure)
Fiscal Year 1988 Program	= $ 219,000	
Fiscal Year 1989 Budget Request	= $ 100,000	

The total study cost is estimated to be $1,622,000 over 5 years with the Nebraska Natural Resource Commission providing $862,000 in-kind services and Cedar Valley Reclamation District providing $30,000 money to the Bureau and Federal Funding being $730,000. The Nebraska Natural Resource Commission's in-kind services will be derived from the Sandhills Study which the Commission is currently conducting. We have been informed that Fiscal Year 1989 Federal Funding of $100,000 is sufficient to complete the first phase of the study which is the Cedar River Basin analysis and report. Additional appropriations would be necessary in 1990 and beyond to continue study reports for the rest of the Loup Basin.

Thank you for your support.

WITNESS LIST

Loup Basin Management Study
Nebraska
April 11, 1988
Before

Energy and Water Development
Subcommittee on Appropriations
United States Senate

Lee Sonderup, Genoa, Nebraska President of the Cedar Valley Reclamation District.

James Vanderloop, Sr., Cedar Rapids, Nebraska Secretary-Treasurer of the Cedar Valley Reclamation District.

Roger Hellbusch, Belgrade, Nebraska Director of the Cedar Valley Reclamation District.

Michael J. Shaughnessy, St. Paul, Nebraska, one of the attorneys for the Cedar Valley Reclamation District.

Mr. Michael J. Shaughnessy will make the presentation on behalf of the Cedar Valley Reclamation District.

ADDITIONAL PREPARED STATEMENTS ON NEBRASKA PROJECTS

Senator HATFIELD. Thank you, Mr. Shaughnessy.

We have received other statements from people from Nebraska who are interested in this program and they will be inserted in the record so that they will all be included.

Any other comments that you gentlemen wish to make?

Mr. KILDAY. Senator Hatfield, I want to thank you for the support you have given us over the last few years. We started back quite a while ago and made quite a few trips and we are concerned about getting the Twin Loups project finished.

They cut us back a bit. We planned in 1976 to finish it in 1987 or 1988. We are over 60 percent done and every year we delay it our expenses go up and we can't pay back anything.

We would like to get the thing wrapped up and finished. It is not a fault of yours that we were delayed, we understand that, but we would like to get this project finished.

Senator HATFIELD. You are very welcome, and I might say there are some of us who have no choice on this matter with Mrs. Smith on that committee. She is a very tenacious lady.

[The statements follow:]

STATEMENT OF THE NORTH CENTRAL NEBRASKA RECLAMATION DISTRICT

Thank you, Mr. Chairman, and members of this distinguished Appropriations Subcommittee on Energy and Water Development, for the opportunity to present testimony on behalf of the North Central Nebraska Reclamation District as sponsors of the proposed modified O'Neill Unit, Pick-Sloan Missouri Basin Development Program.

We are testifying in support of the President's request of $600,000.00 for continuing the groundwater recharge verification study, which, we understand, is vital to completion of the very complex study of the still experimental groundwater recharge/recovery concept specified in legislation pending for this project in both House and Senate.

As the Subcommittee knows from Bureau of Reclamation testimony, the preconstruction studies are being conducted under a memorandum of understanding involving the Bureau, the U. S. Geological Service, and the State of Nebraska's Natural Resources Commission.

We wish to make it penetratingly clear that we still prefer the original, tried-and-true, fully tested, presently authorized project. As the Subcommittee knows, the original project, first authorized in 1954 and reauthorized in 1972, was a middle-sized, conventional, multipurpose reclamation project.

We have had to alter our position because it became clear in 1983 that the decades-long consensus for the project could no longer support it as long as the Norden Dam remained a major feature.

Accordingly, we reluctantly accepted a federally directed but state-led study of a well-field/groundwater-recharge alternative. The study was completed January 31, 1985, recommending that the Norden Dam and reservoir be eliminated from the project. Instead, the O'Neill Unit would be based on the groundwater-recharge alternative.

Legislation that would authorize this transformation was introduced in both House and Senate in the Ninety-ninth and One Hundredth Congresses.

The bills are pending in appropriate committees, stalled by a host of unresolved water policy and economic issues affecting all water projects throughout the United States. The main problem is that grain surpluses generally exists in many countries besides our own, and there is much resistance at this time to any project that eventually would add food-producing capability to our agricultural sector.

As we all know, federal water budgets continue to be under intense budget pressure as the increasingly urbanized Congress searches for ways to reduce the deficit and balance the budget.

Nevertheless, it is important, as always, for water planners to take a long look at the future. And we think the long-term future is brighter for Nebraska than for many other states.

We assure you, however, that our optimism about the future does not cloud our understanding of the current discouraging situation.

It is true that we do not need any more surplus corn, feed grains, and wheat production from federally irrigated land. And, lots of well-intentioned but misguided persons are turning away from our basic red-meat production.

Urban-based Members of Congress have imposed cost-sharing on all new federal water project construction. They have saddled water planners with an 8.875 per cent interest rate to apply to cost-benefit ratios for all new water projects.

The Office of Management and Budget (OMB) already is trying to apply this rate also to old projects--to the dismay of those directly impacted.

The Bureau of Reclamation is ending its era of major construction of multipurpose dams and reservoirs and is busy reorganizing itself into a mere shadow of its former self.

Instead of irrigation, water is more and more provided for municipal and industrial use, for enhancing wildlife habitat, and for recreation.

The Bureau has served notice that it intends to use so-called "normalized" farm commodity prices in calculating cost-benefit ratios for new projects. Only legislation put into the Continuing Resolution for this fiscal year kept that idea from going into effect. Unfortunately, that battle is not over--yet.

The facts are, pressure is high from urban forces to eliminate growing, in their words, "subsidized crops with subsidized water."

"Normalized" farm prices are imaginary prices calculated by the U.S. Department of Agriculture statisticians. Normalized prices are supposed to be what farm prices would be if there were no federal farm price-support programs in operation.

Very, very few water projects could have a favorable cost-benefit ratio if based on the imaginary normalized prices.

Urban members in Congress were able to impose a deadly provision in 1985 in the reauthorized Garrison Diversion Unit in North Dakota.

That provision requires any water user who produces surplus crops to pay a penalty equal to 10% of full cost of the project. That figures out to perhaps as much as $60.00 per acre in the Garrison Diversion Unit.

And that would have to be paid on top of what other government formulas calculate for repayment of construction costs.

In the North Loup Division, Nebraska, for example, the recently renegotiated repayment contracts requires the water users to increase their payments by $4.00 per acre to a grand total of $27.90 per acre. The idea of socking the water users an additional $60.00 per acre for the privilege of growing wheat, corn, and feed grains would cause water users to petition out of

the project en masse. Fortunately, the 10% full cost penalty so far would be applied only to new construction.

Some powerful city-based Members are dying to impose full cost on water users--not 10% of full cost--but full cost, or about $600.00 per acre per year in new projects.

Hearings have been held on such measures by the Interior Committee, but so far these bills have not been brought to the House floor.

Colorado and Wyoming both are hot after the Platte River's waters. They seem to want to cut our water off at their borders. Over the past several years, concern has been growing in Congress also about contamination, as well as over-use or "mining" of our groundwater supplies.

This problem was widely discussed during consideration of the big omnibus Water Resources Development Act of 1986.

Without doubt, this growing concern about use, protection, preservation, and recharging groundwater supplies poses additional difficulties for water-project planning and development such as is at the heart of the modified O'Neill Unit.

Nevertheless, we are living on hope--hope that the nation will see the wisdom of sustaining water-resource development, particularly of such advanced technology as is being pioneered in the "new" O'Neill Unit.

Although many farm commodities are in surplus supply now, basically the world's population continues to explode. Current price-depressing surpluses could disappear almost overnight anyway if the weather turns bad in just a few key producing areas.

And, with about three million acres of farmland disappearing annually to suburban development, highway-building, airports, and other development, the United States may one day be hard pressed to find sufficient food-producing land to meet domestic and export demand.

While nearly half of our project area already is irrigated from wells, the water table is falling rapidly, and if this project is not built, the land eventually will return to dryland farming--that is, almost the equivalent of desert.

The O'Neill Unit project lands are extremely adaptable to irrigation. But corn is the most abundant, profitable crop in the area.

We can see that Congress is more and more opposed to production of any more surplus crops with federal irrigation water.

That is why as project sponsors we hope that our water users will experiment more extensively with alternative, nonsurplus crops.

Already there have been efforts to grow dry edible beans. Other vegetable crops often are grown in irrigation projects.

It is difficult to create all the new systems that have to go with new crops--harvesting, assembling, processing, transporting, and marketing.

We are aware of the efforts of our Congresswoman, Virginia Smith, and Senator Harkin of Iowa to initiate research and development of new industrial crops and new uses of old crops in bills pending before the Congress.

We hope and pray that these efforts will result in developing important new uses for our land and water resources.

In the meantime, we are learning more about the new technologies being studied with the funds recommended by this Subcommittee for application in the O'Neill Unit. We would be glad to answer the Subcommittee's questions about the area and its people.

Thank you for providing this opportunity to present our testimony.

Statement of the Central Platte Natural Resources District

My name is Ron Bishop and I am General Manager for the Central Platte Natural Resources District. Our Central Platte Natural Resources District covers part or all of the ten counties in south central Nebraska that encompass the Platte River and its drainage areas along a 175 mile stretch extending from Gothenburg, Nebraska on the west to Columbus, Nebraska on the east.

A number of serious problems and critical needs relating to water exist within our Natural Resources District area. The economy of the area and the well-being of the people residing therein is dependent upon irrigated agriculture with the primary source of irrigation water being ground water.

The ground water levels, however, have been declining, causing an increase in pumping costs and an accompanying reduction in well production. The current ground water level declines of up to 25 feet are predicted to increase over the next 20 to 35 years to the point where thousands of irrigated acres will revert to dry-land without some kind of a supplemental supply project.

Additionally, each and every one of the over one hundred thousand residents within our Natural Resources District gets their drinking water supply from ground water but ground water quality problems have developed in the eastern half of our District to the point where a number of municipalities have had to abandon wells because the nitrate levels exceeded the U.S. Public Health Service's published maximum safe level for human consumption.

The area is also subject to infrequent but severe flooding. The single flood event of June 1967 caused over $30,000,000.00 worth of damage in the eastern half of our Natural Resources District alone.

In addition to those three major problems there are also some needs related to water within our area.

First of all, there is a need to maintain adequate water supplies for the waterfowl, fish and wildlife that currently utilize the area. The Big Bend area of the Platte River Basin in Nebraska plays host to several million migratory waterfowl each and every year.

There is also a need within our area for water based recreation facilities for our residents and the other residents of central Nebraska.

Senator James Exon, the late Senator Edward Zorinsky, Senator David Karnes, Congresswoman Virginia Smith, and our Natural Resources District along with several other agencies, organizations, groups, associations and individuals have been working for a number of years toward getting a water resources project implemented in the area that would resolve those problems and address those needs.

Thanks to the foresight of this committee we were successful in getting the necessary authorization and funding that enabled the U. S. Bureau of Reclamation to conduct a feasibility study on the project area and develop a plan to address the many problems.

To help reduce the Federal expenditure, our Central Platte Natural Resources District transferred $240,000.00 in cash to the Bureau of Reclamation for the feasibility study efforts. In addition to the direct cost-share funds, there has been an even larger amount provided in in-kind-services in the form of research, studies and data collection. These in-kind-services have been provided not

only by our Natural Resources District and the local sponsors, but also by State of Nebraska agencies and other interested groups.

An example of the in-kind-services, research and studies that have been useful in developing the plan and conducting the feasibility study are the six items listed below that were conducted by our Natural Resources District:

(1) Water Quality Studies. The water quality studies and programs that have already been conducted will be beneficial to the planning of the water resources project as it relates to identification of water quality problem area, extent of the problem and effective methods of improving the ground water quality.

The local people, through our Central Platte Natural Resources District, have provided over $500,000.00 in cash toward those studies to date, in addition to the hundreds of man hours involved.

The additional funding by the State of Nebraska toward those studies has been approximately equal to the $500,000.00 local contribution.

(2) Ground Water Model. Our Central Platte Natural Resources District and the Lower Loup Natural Resources District, which borders us on the north, under contract with the U.S. Geological Survey, has developed a detailed ground water flow model of the ground water basin lying between the Loups and Platte River from the Lincoln-Dawson County line eastward, which encompasses the proposed project area.

The approximate cost of this ground water flow model is $120,000.00 with the cost being shared on a approximate 50-50 basis between U.S. Geological Survey and the districts.

The ground water model was available as a planning tool in evaluating the various alternatives available for the water resources project.

(3) Study of Engineering Alternatives. Our Natural Resources District contracted with the Denver, Colorado office of the engineering firm of CH2M Hill to look at various project alternatives available to the local people. One set of alternatives the firm evaluated was the physical or engineering alternatives available to address the water supply needs of the project area.

(4) Study of Financial Options. Another set of alternatives evaluated by CH2M Hill firm were the options available to the local people for financing or assisting in the financing of the water resources program.

(5) Study of Institutional Options. The third set of alternatives evaluated by CH2M Hill for the District were the options available to the local people for establishing an organization to develop, manage and operate a water resources program.

The studies by the private firm of the engineering alternatives along with the study of the financial and institutional options was done under contract to, and paid for by, the Natural Resources District at a cost of approximately $35,000.00.

(6) Hydrologic and Water Resources Investigation. The engineering firm of Henningson, Durham and Richardson from Omaha, Nebraska conducted an investigation of the water availability in the Platte River and the preliminary water needs of the proposed project area. The investigation and studies by Henningson, Durham and Richardson were done under contract to, and paid for by, local interests at a cost of approximately $23,000.00.

All of the data from these and many other studies conducted by the Natural Resources District and the other studies conducted by or with the assistance of other groups, has enabled the local Bureau of Reclamation office to progress to the point where they will complete the feasibility study this fall and be ready for advanced planning.

The Prairie Bend Unit will provide not only the means to resolve the water problems within the Prairie Bend area, but would also provide the means by which to resolve the minimum flows and environmental concerns on the river, and the water needs for the projects below.

A lack of federal funding for fiscal 1989 disrupts the entire process and it would prove to be economically inefficient. There is always a certain amount of lost time and effort whenever you start back up after a shutdown. That would occur without the advanced planning funds we are requesting. An equally serious result of a stop in the planning would be the loss of key planning team members. With no funds for fiscal 1989, key planning team members for the Bureau of Reclamation would be assigned to other jobs, most of which would be in other areas, and the experience, knowledge and background that they have developed on the project and the river would be lost. Such an approach would be inefficient use of time and of federal, state and our local funds.

For those and a number of other reasons, we feel it is critical that $800,000.00 be added to the federal fiscal 1989 budget for "advanced planning" efforts by the Bureau of Reclamation for the Prairie Bend Unit. We would like to request your support and assistance in getting that done.

We would hope that you would all lend your strong individual and committee support so that the Bureau of Reclamation can do the advanced planning on the Prairie Bend Unit that we so earnestly need.

Thank you.

STATEMENT OF OMAHA, NEBR.

SUMMARY OF REQUEST

The City of Omaha, Nebraska, is requesting Congressional support for the funding levels contained within the President's 1989 Budget. This budget includes appropriations for construction to fund recreational facilities at Dam Site 18, complete similar developments at Site 20, address the water quality problem at Dam Site 18 and continue flood control mitigation along the Papillion Creek.

The City does support full appropriations, as contained in the proposed budget, for the Papio Natural Resources District sponsored projects at Dam Site 20 and along the Papio Creek. These projects have immense positive impact upon the Omaha area and the City strongly supports these efforts by the Papio Natural Resources District and the U.S. Army Corps of Engineers.

Completion of Dam Site 18, however, has special significance for the City of Omaha and its residents. Since its inception, Dam Site 18 has been regarded as the most important of the original twenty dams. As a result of its suburban location, Site 18's facilities are critical to the area residents.

For many years, the City of Omaha Parks and Recreation Plan has anticipated the Dam Site 18 facility and has reacted accordingly. Open space connecting coordinators have been acquired to eventually provide trail access for thousands of homes. Other park property has been purchased and recreational facilities developed based upon the anticipation of Dam Site 18's immediate inclusion within the system. Because of the extensive nature of the planned facilities, development of Site 18 is anxiously anticipated by thousands.

HISTORY

General

The Nebraska Papillion Creek and Tributaries Lakes project was authorized by the Flood Control Act of 1968, Public Law 90-483. As originally envisioned, the flood control plan consisted of twenty lakes and would have provided flood protection to approximately 215 square miles; 4,205 acres of water and 7,515 acres of park land would have been placed in public domain.

Over the past twenty years, various agencies including the Corps of Engineers, City of Omaha and the Papio Natural Resource Authority have worked together to complete Dam Site 11 (Glenn Cunningham Lake), Dam Site 16 (Standing Bear Lake) and Dam Site 20 (Wehrspann Lake). The success of these dams, both for flood control and recreation, is a result of continual Congressional appropriations and the cooperative ability of local and federal agencies.

The original Papillion Creek plan has been significantly altered since 1968. In 1980, escalating costs and new cost-benefit analyses resulted in all additional sites, except Dams 18 and 20, being placed on inactive status. Still, the impact of the existing lakes has been impressive. In 1987, 1,449,685 visitors enjoyed the recreational facilities of Glenn Cunningham and Standing Bear Lakes. The City of Omaha, which shares the costs and management of these facilities, envisions a continued usage growth as residential development approaches these areas.

The new Wehrspann Lake (Dam Site 20) is cost shared by the Papio Natural Resources District and will open in July, 1989. Eventual attendance is estimated at 495,000.

Dam Site 18

The recreational potential of Dam Site 18 makes it the most important of the originally proposed lakes. Located within Omaha's residential suburbs, its surface water and public lands have been viewed for many years as a primary recreational resource.

Dam Site 18 was authorized in 1968, along with the other Papillion Creek projects. In September 1980, Congress in the Energy and Water Development Appropriation Bill of 1981, appropriated funds to begin construction of Dam Site 18. Additional funds have been appropriated annually.

The City of Omaha recognized the need for Dam Site 18 and agreed to sponsor recreational development. In a 1981 letter, the City reaffirmed its intention and authorized a cost-sharing contract, which was approved by the Secretary of the Army in April, 1983.

Dam Site 18 is located on the Boxelder Creek tributary of the West Papillion Creek. The dam is located near 156th and "F" Streets in suburban Omaha. The lake, at its multi-purpose pool elevation of 1110 m.s.l., will provide 255 acres of water. A total of 1,023 acres of public park property will become available when the recreational developments are complete.

Construction of the dam was essentially finished in 1985. Impounding of water has been delayed pending funding for the recreational developments and a water quality issue resolution.

However, in January of 1988, the Master Plan Supplement No. 2 was completed by the Corps of Engineers and reviewed by the City. This has allowed the Corps of Engineers, with City concurrence, to proceed with plan preparation for Phase I Recreation Development. Pending funding availability, fall construction is anticipated in 1988.

City officials are confident the upstream contamination can be mitigated and is nearing a solution with the assistance of several local governmental agencies and the Corps of Engineers. A system of holding ponds appears to provide the most cost-effective solution, one which has been reviewed and approved by the Corps of Engineers.

RECREATIONAL NEEDS

In addition to serving a vital flood control function, Dam Site 18 has been designed to provide major recreational facilities for southwest suburban Omaha. No recreational development has been more important to Omaha's future. Major passive recreational needs as identified by the Nebraska State Comprehensive Outdoor Recreation Plan include:

Activity	Current Needs	Available at Site 18
Fishing	8,778 acres	255 acres
Boating (no wake)	11,142 acres	180 acres
Picnicking	6,294 tables	160 tables
Camping	2,498 pads	20 pads (group)
Trails	91 miles	6 miles

The Nebraska State Comprehensive Outdoor Recreation Plan states that the Omaha region contains 34 percent of the State's population but has only 1.5 percent of the State's recreational lands.

Other unique passive recreational needs are being addressed at Site 18 by conservation of a major tall-grass prairie. The Bauermeister Prairie, with 40 acres of native grasses, will be carefully planned with a contained trail, informational signs and interpretive brochures. Also, a major parking area is designed to provide a vista to the Bauermeister Prairie.

Additionally, since Site 18 is located within suburban Omaha, its 1,000 acres of parks will provide a convenient opportunity for area residents. To encourage visitation, a system of trails connecting area housing developments has been initiated. In addition, an open space corridor along the Boxelder Creek is being acquired through the City's subdivision process. Once completed, this advanced planning effort will provide safe, relaxing access to Site 18 for thousands of homes.

Fishermen have already become actively involved. For example, a recent effort resulted in hundreds of volunteers constructing and placing fish habitat improvements at Site 18.

Few Corps of Engineers lakes will provide the active use recreational facilities being developed at Site 18. The City's 1987 Parks and Recreation Plan relies heavily upon these facilities to meet identified active recreational needs and public support for the announced recreational developments has been strong from the Omaha Softball Association, Nebraska State Soccer Association and the Kingswood Athletic Association. Major facility deficiencies exist for ballfields, soccer fields, playgrounds and football fields. The City's general open spaces are also well below acceptable standards.

The Omaha Parks, Recreation and Public Property Department has coordinated the recreational needs, not only for various user groups, but also for the general public. The Department has been an integral element in the Corps of Engineers planning process, ensuring the appropriateness of facility design and direction. Following construction, the Department will maintain, manage and operate the site's facilities in the same quality, professional manner associated with Glenn Cunningham and Standing Bear Lakes.

MAJOR FACILITIES PLANNED FOR DAM SITE 18

In January of 1988, the Corps of Engineers and the City of Omaha completed the Master Plan Supplement No. 2 for Dam Site 18. The adoption of this document allows the immediate initiation of Phase I construction. If the 1989 Congressional funding is provided, this construction can be initiated in the fall of 1988, with additional phases scheduled for Spring of 1989.

As previously detailed, the Omaha area has significant recreational needs. These needs are addressed at Site 18 through the construction of the following major facilities:

Phase I Construction

1. Boat Ramp and Boat Rental Concession
2. Soccer Fields
3. Picnic Areas
4. Access Roads
5. Comfort Station
6. Landscaping
7. Walking Trails
8. Scenic Overlooks
9. Winter Sports Area
10. Nature Study

Future Phase Construction

1. Softball/Baseball Complex
2. Playground Complex
3. Trails
4. Walnut Grove Connector
5. Nature Prairie Study Area
6. Scenic Overlooks
7. Additional Picnic Areas
8. Group Camping Area
9. Horseback Trails

CONCLUSION

Since 1968, the citizens of Omaha have patiently anticipated the construction of Dam Site 18. Not only will the Dam Site provide badly needed water recreation, activity fields, picnic facilities, exercise trails and camping, but it will also provide a unique glimpse into Nebraska history with a forty-acre tract of native prairie land.

The City of Omaha's park planning efforts have relied heavily on Dam Site 18 to provide many of the recreational needs in the southwestern portion of the City. No recreational development has been more important to Omaha's future. If funding for the recreational development is continued, planned facilities at Dam Site 18 will provide millions of hours of pleasure for thousands of users while addressing badly needed flood control measures.

The City of Omaha would like to thank the members of the House Appropriations Subcommittee on Energy and Water Development for the opportunity to speak and present written testimony on this item.

Statement of Lower Platte North Natural Resources District

UPPER BIG BLUE NATURAL RESOURCES DISTRICT—GROUNDWATER RECHARGE DEMONSTRTION PROJECT

Passage of Public Law 98-434 has provided the incentive to determine methods of proper utilization of surface or groundwater for recharge of water deficit areas. Information gained from these recharge demonstration areas will provide valuable information for application of the technology to other areas of Nebraska as well as for the nation.

With the increase in nitrate and pesticide levels over much of the agricultural portion of the nation, these demonstration projects may provide a means of correcting some of these problem areas.

Funding for the Upper Big blue Natural Resources District at York, Nebraska Groundwater Recharge Demonstration Project is needed to allow proper progress of the project. I, therefore urge you to allow obligation of funds to the project so that this timely information can be developed.

PLATTE RIVER DEMONSTRATION PROJECT

The Platte River Demonstration Project, as part of the Corps of Engineers program of river bank stabilization, is an integral link in the development of proper methods of river bank stabilization.

The U.S. Army Corps of Engineers from the Omaha office, along with many state and local agencies, are presently undertaking a Platte River Cumulative Impact Analysis. The analysis, among other items, will assess the performance and economics of stabilization practices and will have a direct bearing in the selection and design of appropriate structures.

The local sponsor of the Platte River Demonstration Project is cooperating fully with the U.S. Army Corps of Engineers on the Cumulative Impact Analysis. The analysis is being conducted such that the project sponsor should be able to proceed in the very near future.

Obligation of the requested funds will allow timely activation by the local sponsor in the project. I, therefore, urge you to obligate those requested funds.

PRAIRIE BEND PROJECT—CENTRAL NEBRASKA

The sponsors of the Prairie Bend Project are seeking obligation of $800,000 for advanced planning activities and for project design. In order to be able to properly evaluate the project it will be necessary to see the project design.

The project has changed from the original concept. Presently the design centers around what is called Alternative 13 which proposes less water from the Platte River, the source of the recharge portion of the project. Design of the project and the

proper utilization of the water source will determine ultimate decision on this project.

If the presently requested funding is obligated it would provide the base for future decision making on the project.

NORTHERN GREAT PLAINS AGRICULTURAL CHEMICAL LEACHATE RESEARCH SYSTEM

Mr. Chairman, member of the Subcommittee on Energy and Water Development, Committee on Appropriations. This testimony is in support for establishment of a Northern Great Plains Agricultural Chemical Leachate Research System.

In Congress, as well as in most of the water oriented community, there is a continuing discussion pertaining to the proper level of government action regarding groundwater quality protection. The multitude of federal bills directed at groundwater status certainly reinforces that fact. Drinking water quality is of prime health concern to most of the nations voting public.

Increasing nitrate and pesticide levels in groundwater samples demonstrate that problems do exist in the farming communities of the nation. Nebraska, like most agrarian states, must utilize fertilizer and pesticides of some type and in some quantity in order to remain competitive in the national market place. Users of the chemicals are also highly concerned that improper usage will lead to impaired health consequences as well as to degradation of the aquatic system.

Most thinking individuals realize that the best method of stemming chemical impairment of the groundwater quality is through the prevention of such impairment. The use of best management practices also appears to be the preferred approach to contamination prevention. However, prior to establishing best management practices it is necessary to be knowledgeable of the ultimate fate and movement of chemicals through the soil and water profile.

Presently, there is a very small data base of information relative to the leaching problems of chemicals. Various soils and soil profiles exhibit varying leaching conditions. Chemicals also have certain properties that determine their leaching potential. Water solubility, hydraulic properties, degradation action and absorption capabilities must all be determined in a given situation before proper best management practices are applied.

Many of the key items of the federal groundwater bills incorporate four such aspects: (1) Development of a proper education program, (2) comprehensive groundwater monitoring system, (3) program groundwater planning between all government agencies, (4) planning on the local level as the major program emphasis. In order to properly develop any of these four items it is imperative that the fate and effect of the chemical be known. The proper method of obtaining that information is through the land grant college system of laboratory and field study application. The land grant colleges can provide the best information because they are not trying to promote a product but are attempting to assist in sustaining the nations productive capability.

Therefore, the request by Dr. Roy E. Spalding, Conservation and Survey Division, at the University of Nebraska for the Northern Great Plains Agricultural Chemical Leachate Research System should be a strong consideration for developing the basic data

upon which to build the groundwater protection system. The benefits of such a research facility are nationwide in scope and as such makes the funding a nationwide public interest investment.

I urge you to be timely in your decision making on this proposed system, be patient in awaiting the necessary data on which to base future groundwater programs and persevere in your dedication to protect the nations drinking water supply. I highly recommend the establishment of the Northern Great Plains Agricultural Chemical Leachate Research System.

STATEMENT OF THE AINSWORTH IRRIGATION DISTRICT

Since learning of the Administration's budget recommendations for Fiscal 1989 regarding the Interior Department and more particularly the Bureau of Reclamation, we have examined the proposals in some depth and conclude that the approach must be rejected.

While it is indeed pleasant to see Nebraska's construction funds concentrated toward completion of our newest project, we recognize that there are significant needs for construction funds in other project areas as well.

One of the project's, that advance planning funds of $800,000.00 is needed desperately, to keep this project moving along is, the Prairie Bend Unit of Nebraska.

As you are very much aware of, the ongoing thing is controversy between developers and environmentalists and this has always been a tool used as an excuse by some Congressmen and Senators, as to not provide funding.

The Prairie Bend Project, is a multiple use project and has been and is being supported by all interests. With this in mind, I urge you to do whatever you can to support the sum of $800,000.00 on the advance planning for the Prairie Bend Project.

This may be a model, if you may, for the future of many projects, so that all walks of life can work in harmony and use their funds for better things then bogging down our court systems and delaying projects for years in the courts.

I urge you to give my thoughts consideration to the future of Nebraska and the United States.

STATEMENT OF THE FARWELL IRRIGATION DISTRICT

Mr. Chairman and members of the Committee. My name is Tom Knutson and I am General Manager of The Farwell Irrigation District in Farwell, Nebraska.

I wish to commend the Senate on the legislation they passed last year to help the Farwell Unit. At this point, we do not know how far it will go to solve our problem. However, we do feel that with utilizing our labor forces and the money that will be available, we may be able to go a long way towards solving the high groundwater problem within our District.

This past fall, the District buried 10.9 miles of laterals. We now have approximately 75 miles of laterals buried out of 255 miles in our system. The burial of these laterals provides a tremendous amount of savings in water lost to the system. The legislation passed allows us to utilize money appropriated to continue with the burial of these laterals.

Our plans this year are to spend about $35 to $40,000 on drainage this spring. We plan on gravel packing the drainage which meets with Bureau standards. In addition, we plan on burying 7 to 10 miles of larger sized laterals which will reduce our water loss. If the weather cooperates we plan on also lining some canals.

We urge the Committee's support for the President's request for FY 1989 for the Farwell Unit in the amount of $660,000. Of that amount, $460,000 will be used for burying laterals, lining canals and drainage work. The other $200,000 will be used by the Bureau of Reclamation to do much needed rehabilitation work on the face of the Sherman Dam.

All of this means a tremendous amount to our water users and our District. It provides the opportunity to try and rehibilitate the project at a cost below the Bureau's estimate. It helps to discourage lawsuits by those who might have high ground water problems. In addition, it provides an environment of harmony and cooperation.

Again, we thank you for your past support and we urge the Committee's support for the President's request. Thank you.

Statement of the Lower Platte South Natural Resources District

We are pleased to learn that the Administration's Budget recommendations for Fiscal 1989-90 contains funding for the Corps of Engineers's to conduct a Reconnaissance Study of Antelope Creek in Lincoln.

In March of 1986, the City of Lincoln, with assistance and cooperation from the Lower Platte South Natural Resources District and the Nebraska Natural Resources Commission, adopted the most recent set of flood insurance maps and ordinances necessary to regulate the flood plain in and around Lincoln. These new maps showed significant increases in the areas subject to flooding from Antelope Creek, the depth of flooding, and selected floodway designation. These changes have been attributed to different methodology used in the study, additional years of historical records, and increased urbanization of the drainage basin.

Antelope Creek flows from southeast Lincoln in a northwesterly direction through an extensively developed urban area. This area contains many established residences, businesses, and public facilities, including Lincoln High School, that would be impacted by flooding along Antelope Creek. Flooding would also greatly impair the transportation network through the City.

The economic and social damages from flooding in this built-up urban area along Antelope Creek would be substantial. We believe the potential exists for some countermeasures or projects which could alleviate this problem.

The Reconnaissance Study of Antelope Creek by the Corps of Engineers would be a vital, first step in assessing the problem and potential solutions. We urge approval of funding in the amount of $120,000 in the 1989-90 Corps of Engineers Budget for this Reconnaissance Study.

Another program in which the Lower Platte South NRD is interested is the Clean Lakes Program (Section 314) of the Water Quality Act of 1987. We are in the process of working with the State of Nebraska on an application to the Environmental Protection Agency for assistance under this Program.

The Salt Valley Watershed Project includes ten Corps of Engineers reservoirs constructed between 1962 and 1968 to provide flood protection to Lincoln and the Salt Valley. Subsequent to their construction, these reservoirs have become major recreation areas for the region and the State. They provide a tremendous outdoor recreation opportunity for fishing, boating, camping, and waterfowl hunting.

Branched Oak Lake, the largest of the ten at 1,800 surface acres, is surrounded by nearly 4,000 acres of public lands. This facility receives more than one million recreation user days per year, the most heavily used state-owned public area in Nebraska.

The lands surrounding the lake and the recreation facilities have been developed and are operated by the Nebraska Game and Parks Commission. The remaining lakes are also publicly-owned and developed and utilized for different degrees of recreation.

Noticeable siltation problems are occurring at several of these lakes to a point where recreational usage in certain portions of the facilities is being impaired. One of the major contributors of this silt is upstream cropland, in spite of an estimated range of 59% to 84% of the lands draining into these reservoirs being adequately protected from excessive erosion.

Numerous complaints have been received from individual recreation users and groups concerning this siltation problem. The fisheries resource is being damaged, along with boating, camping, and swimming opportunities.

The Clean Lakes Program of the Water Quality Act would appear to be an avenue of financial assistance to the State of Nebraska and the local governmental entities to restore and protect these lakes for continued recreational usage. The first step would be to conduct diagnostic/feasibility studies on selected lakes to analyze the lakes' condition, determine the causes of sedimentation and eutrophication, and identify procedures necessary to protect and restore their quality. The following phase would be to implement those restoration and protection procedures.

Funding has been provided for this program since 1976, with the exception of the current fiscal year. We encourage your support for funding as a possible Supplemental Appropriation for the current fiscal year and for continued funding in the FY 89-90 Budget for the Clean Lakes Program. The public benefits from such a program can be tremendous.

Statement of the Papio Natural Resources District

The Papio Natural Resources District appreciates this opportunity to request continued support for the flood control project on the Papillion Creek and Tributaries. This project continues to be of vital interest and concern to the 600,000 citizens within the District, the City of Omaha and the Counties of Douglas, Sarpy and Washington.

The District is in support of the Administration's fiscal year 1989 budget proposal as follows:

Papio NRD Budget
Federal F.Y. 89 - Administration's Budget
(October 1, 1988 - September 30, 1989)

	Site #20	Site #18	Channel Project (Center to L St)	Total
Engineering Inspection Administration	$ 35,000	$ 148,000	$ 159,000	$ 342,000
Recreation Construction	447,000	2,210,000	--	2,657,000
Water Quality Lagoon	--	496,000	--	496,000
Revegetation	--	52,000	--	52,000
TOTALS	$ 482,000	$2,906,000	$ 159,000	$3,547,000

The District appreciates the support Congress has provided for the project in the past. We ask the Federal Government to continue funding the Papio Project as stated above in F.Y. 1989.

Further, we emphasize that the local sponsors, namely the Papio Natural Resources District and the City of Omaha, are committed to raising the necessary local cost-share dollars. We want this project completed as agreed upon in recent years.

STATEMENT OF DR. ROY F. SPALDING, CONSERVATION AND SURVEY DIVISION, UNIVERSITY OF NEBRASKA-LINCOLN

REQUEST	:	$2,200,000
FUNDING PURPOSE	:	Upgrade water quality research facilities used to acquire physical and chemical data which are prerequisites for preparing environmental impact statements for U.S. Bureau of Reclamation water projects throughout the northern Great Plains
PROJECT	:	Northern Great Plains Agricultural Chemical Leachate Research Facility
LOCATION	:	Lincoln, Clay Center and North Platte, Nebraska
PROJECT PURPOSE	:	Determine the fate of agricultural chemical leachates beneath the crop rooting zone and in the shallow groundwater

Thank you for allotting time for me to testify before the Subcommittee on Energy and Water Development, Senate Committee on Appropriations. This testimony is for support of a Northern Great Plains Agricultural Chemical Leachate Research Facility which is needed to address non-point groundwater quality problems. This proposal has the support of the Governor's Office, the University of Nebraska Board of Regents, the Nebraska Association of Resources Districts, the Nebraska Fertilizer and Ag-Chemical Institute, the Nebraska Farm Bureau Federation, the Nebraska Groundwater Foundation, the Nebraska Livestock Feeders Association, the Nebraska Natural Resources Commission, the Nebraska Society of Professional Engineers, the Nebraska Stockgrowers Association, and Women Involved in Farm Economics.

This is a proposal to establish a research facility to emphasize investigations on the fate and movement of agricultural chemical leachates beneath the crop rooting zone, which varies with the crop. Whether chemicals reach the water-table after passing through the rooting zone is dependent upon several factors whose impacts are at best poorly understood. One factor is recharge rates which vary with both farming practices and the availability of water. Since federal projects modify both variables, their impacts on groundwater quality need documentation. Bacteriological degradation, which is linked closely to recharge rates, is even less well understood. Knowledge of both recharge and biodegradation rates are prerequisites for preparing environmental impact statements for major federal water projects in the Platte river valley and in other river basins in the northern Great Plains.

Research at the facility also would focus on methodologies for extracting chemicals from pore water, that is, the water contained in the unsaturated sediments. While there are several extraction procedures in use, the actual meaning of the data obtained using these methodologies needs considerable evaluation in order to accurately describe the vertical transport of applied chemicals and their degradation products.

The fate and transport of agricultural chemicals in the saturated system or groundwater also would be addressed. These investigations would study the transformations of the chemicals in different oxidizing environments in the groundwater system. Such environmental changes can result in degradation products that are more toxic than the parent compound. Other objectives of the agricultural chemical leachate research facility would be assessment of the impact of dryland agriculture on non-point nitrate contamination; evaluation and refinement of the efficacy of alternative best management practices on mitigating groundwater contamination and application of unsaturated zone simulation models to the data.

The use of chemicals in agricultural production in the northern Great Plains has increased greatly in the past two decades. In Nebraska alone about 30 million pounds of pesticides and 3.4 billion pounds of fertilizer are used annually. Contamination of the groundwater with nitrate has become very commonplace in Nebraska and eastern South Dakota. In both states cyanosis in young children has been attributed to the ingestion of high nitrate groundwater. Herbicides also are commonly detected in these non-point nitrate-contaminated groundwaters. Over the past decade the frequency of detection and concentration of groundwater contaminants have increased. This

increasing incidence of contamination has created public concern for the health of those relying upon the groundwater as a source of drinking water. This becomes especially critical in states like Nebraska where 82% of the population is dependent upon groundwater as their source of drinking water.

Regulatory agencies are aware of these contamination problems and, as a result of public concern, the U.S. Environmental Protection Agency released a Groundwater Protection Strategy in 1984. The state of Nebraska followed with the Nebraska Groundwater Quality Protection Strategy, one of the first in the nation, in February 1985. These strategies stress source management and control rather than remedial action as the most promising way to protect groundwater from contamination. In Nebraska, source management can occur either in a groundwater quality management area which is under the jurisdiction of the local natural resources district or in a special protection area designated by the Nebraska Department of Environmental Control. By law both types of protection areas are for the exclusive management of non-point contamination. The first groundwater quality management area in Nebraska was designated in 1987 and includes some 500,000 acres of irrigated cropland underlain by nitrate-contaminated groundwater that exceeds the U.S. Environmental Protection Agency's maximum contaminant level. Commercial fertilizer applied to crop land is the major source of the contamination. The management approach with the greatest public acceptance is implementation of best management practices. Recently, regulators and the concerned public have projected the sources of degradation in the known non-point contaminated areas to areas in Nebraska with limited water quality data. In many cases, especially in the nonirrigated cropped areas, the fertilizer and agricultural chemical industry is being blamed unjustly for the nitrate contamination.

An interdisciplinary team of scientists who have close access to a field research site and chemical analysis facilities is necessary to develop an understanding and prediction capability of the fate and movement of agricultural chemicals. In short, an Agricultural Chemical Leachate Facility needs to be established. The National Center for Groundwater Research, a consortium of universities in Texas and Oklahoma, partially serves this purpose in the southern Great Plains region. No such facility, however, exists for the northern Great Plains which has different agricultural practices, geohydrology, and climate and more severe groundwater contamination than the southern region.

Because this research has both regional and national implications, it is logical that the centralized laboratory facility would be located near the problem areas. Nebraska has the best-documented nonpoint-source contaminated groundwater area in the United States and possibly the world. Groundwater in the surrounding states of Colorado, South Dakota, Iowa and Kansas also contains agricultural leachates. Nebraska also has documented the availability of groundwater through extensive test drilling and has significantly greater quantities of groundwater in storage than any of the surrounding states. The core of the proposed facility - a nucleus of nationally known multidisciplinary researchers and basic research equipment - is already in place; consequently, the proposed facility would be built on a solid foundation.

Proposed Laboratory and Field Facilities

The Facility will comprise one biogeochemical research center and two satellite field laboratories. The main laboratory will analyze and interpret on-going research from the satellite laboratories and additional field sites in the region and from in-house experiments. Neither the central laboratory nor the satellite laboratories will be involved in routine monitoring. The expanded research capabilities will be used to strengten our on-going groundwater quality projects in the Lincoln and Clay Center laboratories and to expand our efforts to the North Platte Station. This will permit solicitation for additional private and federal grants which have not been sought because of the lack of an integrated groundwater research facility and some of the necessary analytical equipment. The facility will be interdisciplinary and support cooperative research projects for faculty and students in agronomy, agricultural engineering, geology, forestry, fisheries and wildlife, etc.

The two satellite field laboratories would be located near existing Research and Extension Centers at North Platte and Clay Center. The land is owned by the University of Nebraska and cooperators and is partially instrumented. Major differences in the transport and transformation of agricultural leachates are predicted at the two sites. Unsaturated sediments at North Platte are sandy, while the unsaturated sediments at Clay Center consist of over 60 feet of clays and silts. The North Platte site has a 45-foot deep and 6-foot wide casing with fixed-level scaffolding for lateral instrument emplacement. The research site at Clay Center is equipped with a state-of-the-art linear sprinkler system and is the site of an ongoing leachate research project funded by the Burlington Northern Railroad Foundation. Additional support would be needed to extend the research beneath the crop rooting zone and for the development of equipment to extract sediment pore water beneath the root

zone. Laboratory space to develop the extraction methods and prepare the samples is needed at both sites, while a lateral move irrigation system and office space for additional professional staff are needed at the North Platte site.

The main research center would be located on the University of Nebraska's Lincoln campus. The laboratory facility would house multidisciplinary investigators with expertise best described by the word hydrobiogeochemistry and support personnel (graduate students, electronics technician, glass blower, etc.) and their equipment. The building would need to be renovated for offices, ultra-clean laboratories with purified water systems, and constant temperature bacteriological and geochemical laboratories with sophisticated tracer equipment. Because of the sophisticated analytical procedures and instruments needed, only one centralized laboratory is practical for the region. Should routine monitoring become part of a project, those samples would be sent to a commercial laboratory having the lowest analytical detection limit and the best quality assurance at the lowest price. This is precisely the procedure that has been followed for the past 15 years. Since the methods used in research laboratories are more labor intensive than in pollutant monitoring, require specialized levels of expertise and highly sophisticated equipment, which in many cases is dedicated to a specific chemical, and there are several readily available laboratories performing routine analyses, pollutant monitoring will not be a mission of this Facility.

The cost of the centralized research facility including the necessary instrumentation and laboratory renovation is estimated at $1,550,000 of which $250,000 would be from non-federal sources. The cost of the two satellite field laboratories would be $1,550,000 of which $650,000 would be from non-federal sources. The total federal costs are $2,200,000 which are to be allocated to the University of Nebraska-Lincoln through the Bureau of Reclamation. The annual operating budget for the facility is expected to reach $1,300,000 obtained from state and private funds and federal research grants. The operating budget includes salaries, equipment, and supplies.

ESTIMATED FIVE-YEAR BUDGET

	State	Private	Federal Water Grants	Special Federal Funds	Total
UNL Central Research Laboratory					
Staff Support (5 FTEs)	$2,500,000	200,000			2,700,000
Laboratory/Office Development				700,000	700,000
Equipment, Instrumentation	250,000			600,000	850,000
Special Project Support		975,000	1,000,000		1,975,000
SUBTOTAL	$2,750,000	1,175,000	1,000,000	1,300,000	6,225,000
South Central Research & Extension Center (Clay Center)					
Staff Support (1 FTE)	$200,000				200,000
Equipment, Instrumentation				100,000	100,000
Field Lab Building				150,000	150,000
Special Project Support		200,000	75,000		275,000
SUBTOTAL	$200,000	200,000	75,000	250,000	725,000
West Central Research & Extension Center (North Platte)					
Staff Support	$961,500				961,500
Laboratory/Office Construction	200,000	350,000		400,000	950,000
Field Lab Land	50,000	50,000			100,000
Field Lab Buildings	150,000	150,000		50,000	350,000
Equipment, Instrumentation	50,000	50,000		100,000	200,000
Irrigation Systems				100,000	100,000
Special Project Support		100,000	75,000		175,000
SUBTOTAL	$1,411,500	700,000	75,000	650,000	2,836,500
GRAND TOTAL	$4,361,500	2,075,000	1,150,000	2,200,000	9,786,500

STATEMENT OF THE MISSOURI RIVER BANK STABALIZATION ASSOCIATION

On behalf of the membership of the Missouri River Bank Stabilization Association, we do want to thank you for this opportunity to testify before you with reference to the Fiscal Year 1989 budget. We do appreciate your granting us the privilege of testifying, and for the genuine interest and consideration you have shown us today and on previous appearances.

As you know, there is little left of the "wild Missouri", the river familiar to Captains Lewis and Clark, who, just 184 years ago this month began their ascent of the then mysterious Missouri. Thanks due to your interest and concern, a segment of the old Missouri is being protected and preserved. Last year you demonstrated your interest and concern for the "old-time Missouri" through your recommendation of $100,000.00 in construction funds and $200,000.00 in maintenance funds. We certainly thank you for that concrete expression of your support!

Today we are here to request that funding for the Missouri National Recreation River Project, authorized in 1978 under Section 707 of Public Law 95-625, **be included in the budget for FY 1989.** At the time that project was authorized, its cost (over a period of years) was identified as $21,000,000.00. **For FY 1989, $1,000,000.00 is needed for construction as well as $200,000.00 for operation and maintenance of the works already completed along this reach of the river** under the Section 32 Streambank Erosion Control and Demonstration Act which ended in 1983.

To recapitulate, this project covers a fifty-nine (59) mile reach of the Missouri lying between the Gavins Point Dam, near Yankton, South Dakota, and the Ponca State Park, near Ponca, Nebraska. This is the sole remaining reach of the Missouri below Gavins Point Dam which is neither channelized for navigation nor inundated by any of the "main-stem" dams on the Missouri. Here, the Missouri occupies its "old" valley, that not changed by the most recent period of glaciation. This valley is considerably wider than the "new" valley extending upstream of Yankton, South Dakota, and the loose, fertile soil is easily eroded. Unchecked, the Missouri wanders at will. Exacerbating the problem are the varying releases of water at the Gavins Point Dam. Those releases are determined by numerous, often unpredictable factors such as navigation needs, the demand for hydro-electric power, efforts to protect endangered species (such as the least tern and the piping plover), the need for flood control, and the demand for drinking water. In consequence, the unprotected soil of the floodplain is often ravaged. The River's corridor here is that which we seek to protect and preserve.

Continuation of the funding for this project will enable the Corps of Engineers to pursue its work to restrain the River and protect the investment of some $6,000,000.00 of work already completed. **We believe the financial responsibility for this falls to the federal government because this is, after all, a *national river*, so designated by Congress.**

Once again we thank you for this opportunity to appear before this subcommittee and for the consideration you have shown for those farmers, outdoorsmen, environmentalists, and others who make up the Missouri River Bank Stabilization Association.

We would be happy to try to answer any questions you might have.

Thank you.

STATEMENT OF THE LEWIS & CLARK NATURAL RESOURCES DISTRICT

The Lewis and Clark NRD, as an active sponsor for Missouri River Bank Protection construction in 1975-1980, would like to have you include us as supporters of the efforts of the Missouri River Bank Stabilization Association.

We have spent considerable time as a Natural Resource District and local sponsor investing in the protection of the Missouri River as a resource. We have been disappointed in recent years that the designation of the 59 mile reach as the Missouri National Recreation Project has not resulted in adequate funding to go beyond an authorization stage. Likewise operation and maintenance of the existing structures has suffered from lack of local funding to reinforce a situation that has national significance.

Please receive this letter as our testimony to the need for federal funding in the upcoming budget for the project and help this association of concerned citizens realize the goals they are working for.

STATEMENT OF MARVIN J. RICKERT, WOOD RIVER, NEBR.

I, Marvin Rickert, being a farmer who has lived in the Prairie Bend water project area my whole life and having farmed for nearly 30 years in this area, realize the water declines and the need for a water project.

I am asking for your support for advanced planning funds for the Prairie Bend Water Project.

I want to thank you for your support in the past and for your future support in solving our water problems.

STATEMENT OF NEBRASKA STATE IRRIGATION ASSOCIATION

Since learning of the Administration's budget recommendations for Fiscal 1989 regarding the Interior Department and more particularly the Bureau of Reclamation, we have examined the proposals in some depth and conclude that the approach must be rejected.

While it is indeed pleasant to see Nebraska's construction funds concentrated toward completion of our newest project, we recognize that there are significant needs for construction funds in other project areas as well.

Even more critical is the complete elimination of general investigations and planning funds for the several project activities in Nebraska. The suggestion by Interior and the Administration that the postponement of such planning investigations is made upon projects having little chance to receive construction funding in the foreseeable future seems to be an inappropriate reason for curtailing these activities.

The process of water resources management and development is one of an ongoing nature continually needing input through planning if the ultimate reality of project development, upgrading and improvement are to be accomplished. To that end, it is important that general investigations and planning activities be continued. Each of the areas under current investigation by the Bureau of Reclamation in Nebraska need to be continued if Nebraska and its local water resources leaders are to in fact have the opportunities to make the decisions necessary for this state's resources future.

In particular, general investigations with regard to the Prairie Bend Unit are of critical importance. Prairie Bend, as the project is presently presented, has an opportunity to be the true milti-purpose water resources project that all interests in the water community have been contemplating for years. The project has had substantial local input through district cash contributions and in-kind services provided by natural resources districts in the area along with other local sponsors, environmental organizations and the State of Nebraska. That local monetary commitment is, in itself, a measure of interest and enthusiasm for the planning process which is directed toward the development of a multi-purpose project.

The Platte River in Nebraska has been an area of national attention in recent times. Most of the water conflicts and controversies in the recent decade in Nebraska have centered around the Platte River. Finally, it is possible that through the continued planning of the Prairie Bend Unit much of that controversy involving many of the parties to the controversy can, for once, be resolved. To suggest then that part of the way through this comprehensive planning process punctuated by excellent conflict resolution conversations that the federal government completely eliminate further planning endeavors is a disservice to the commitment of the state and local people as well as to the concept of multi-purpose resources planning and development.

Nebraska's State Irrigation Association therefore supports, at a minimum, the inclusion of the sum of $800,000 for advanced planning for the Prairie Bend Unit in Nebraska.

This association would likewise request your support for those inclusions in the Fiscal 1989 budget for the Bureau of Reclamation, and for the reassessment of the general direction proposed for further Bureau planning and construction efforts under the Administration's 1989 budget.

Statement of Alvin T. Smith, Executive Director, Nebraska Water Resources Association

Since learning of the Administration's budget recommendations for Fiscal 1989 regarding the Interior Department and more particularly the Bureau of Reclamation, we have examined the proposals in some depth and conclude that the approach must be rejected.

While it is indeed pleasant to see Nebraska's construction funds concentrated toward completion of our newest project, we recognize that there are significant needs for construction funds in other project areas as well.

Even more critical is the complete elimination of general investigations and planning funds for the several project activities in Nebraska. The suggestion by Interior and the Administration that the postponement of such planning investigations is made upon projects having little chance to receive construction funding in the foreseeable future seems to be an inappropriate reason for curtailing these activities.

The process of water resources management and development is one of an ongoing nature continually needing input through planning if the ultimate reality of project development, upgrading and improvement are to be accomplished. To that end, it is important that general investigations and planning activities be continued. Each of the areas under current investigation by the Bureau of Reclamation in Nebraska need to be continued if Nebraska and its local water resources leaders are to in fact have the opportunities to make the decisions necessary for this state's resources future.

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Statement of Rufus T. Amis, Board of Directors, Nebraska Water Resources Association

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Nebraska's Water Resources Association therefore supports, at a minimum, the inclusion of the sum of $800,000 for advanced planning for the Prairie Bend Unit in Nebraska.

This association would likewise request your support for those inclusions in the Fiscal 1989 budget for the Bureau of Reclamation, and for the reassessment of the general direction proposed for further Bureau planning and construction efforts under the Administration's 1989 budget.

STATEMENT OF RON HARGENS, CAIRO, NEBR.

I farm between Cairo and Wood River in the approximate center of the Prairie Bend area. I am 41 years old and have always lived in this area and have farmed for 23 years for myself.

In that time period I have seen the shallow wells go dry, being replaced by deep wells, tripling the horsepower requirements for irrigation water. On the land I farm there have been six irrigation wells abandoned for lack of production. Replacement wells were drilled at a greater depth to sustain irrigation.

According to the Bureau of Reclamation studies, and other studies done by private engineering firms, it is shown that in parts of the Prairie Bend area the aquifer life to sustain irrigation is 25 years or less.

In the same period the nitrate levels of some of our wells have increased to up to 30 parts per million. This is three times the level for quality standard safe drinking water.

To solve some of our problems, the Central Nebraska Conservation Association (Prairie Bend) was formed by a group of farmers and landowners from the Cairo, Wood River and Shelton area in western Hall and eastern Buffalo Counties in Nebraska. The purpose of the organization is to develop an irrigation and ground water recharge project to combat declining water tables and well production in much of the area.

To do this we filed a water right application in March of 1976 with the State of Nebraska to divert, store and use Platte River water. In October, 1976 we went to the Central Platte Natural Resources District, a local government subdivision, to ask them to assist us in securing a feasibility study. The Board of Directors unanimously decided to help us because of the existing and future water problems. Together we began seeking assistance from the Bureau of Reclamation to have them do a feasibility study of the area.

Our Nebraska delegation secured authorization and funding approval in both the House and the Senate for the feasibility study in 1983 and the study is now underway. The Central Platte Natural Resources District has provided to the Bureau of Reclamation $240,000.00 to help fund the feasibility study and additional financial support is being offered from the Central Nebraska Conservation Association.

The Bureau of Reclamation feasibility study, nearing completion, shows that there is a very valuable and feasible project to be developed in the area. The project would be mainly to stabilize stream flows in the Platte River for the endangered Whooping Crane, Bald Eagle, Least Terns and Piping Plover. It would also provide ground water recharge for the farm economy and tend to reduce nitrate levels of our drinking water.

The project is being supported by several area groups and organizations: the Hall County Board of Supervisors, Buffalo County Board of Supervisors, Kearney Chamber of Commerce, Grand Island Chamber of Commerce, City of Grand Island, the towns of Cairo, Shelton and Wood River, Central Platte Natural Resources District, Central Nebraska Conservation Association, and the Whooping Crane Habitat Maintenance Trust. The Central Platte NRD also conducted a public opinion poll by mail and of those who had an opinion, 85 percent were in favor.

With this amount of State and local support, and the existing and future water problems of water quality and supply, I feel it is of utmost importance that the effort be continued. The project needs $800,000.00 to continue the progress of resolving our groundwater and wildlife problems.

Therefore, I am submitting this testimony to request your support of advanced planning funds in order to continue the effort for the Prairie Bend Project by the Bureau of Reclamation.

STATEMENT OF RODNEY K. GANGWISH, SHELTON, NEBR.

I would like to take this opportunity to submit written testimony in support of advanced planning funds for the Prairie Bend Unit being planned by the Bureau of Reclamation.

I am a landowner and live two and a quarter miles south, and two and a quarter miles west of Shelton, Nebraska, within the boundaries of the proposed Prairie Bend Unit and am actively engaged in a farming partnership with my brother.

I wish to convey to you a growing concern on the part of myself and my neighbors about the future of irrigated agriculture in our area.

We have ground water declines of 15 to 25 feet in the area with a significant decrease in well production. In most areas of the northern part of the Prairie Bend Unit, the top water Pleistocene formation has been depleted. Some of these shallow wells in the northern reaches of the area that were yielding 700 to 800 gallons per minute 10 years ago and now yield less than 150 gallons per minute. These shallow wells have been replaced with deep wells drilled into the Ogallala aquifer. The problem is that in some areas the Ogallala formation either does not exist or is not that productive and is yielding only 400 gallons per minute.

The land we farm that lies close to the Platte River (within two to four miles) also has no deep water Ogallala aquifer. The wells on this land have decreased up to 25 percent in output over the last 15 to 20 years.

This trend is alarming to me, and when we take into account the projections of ground water models and studies, such as the Platte River Basin Level B Study conducted by the Missouri River Basin Commission, our future for sustained irrigated agriculture is in serious jeopardy.

In addition, there are water quality problems. All of the rural residents and towns in the area get their drinking water from ground water. Several communities have problems because their nitrate content is above the Public Health Service's recommended maximum. I had to replace my well a few years ago because it was yielding water with this same problem.

Flooding is another problem and, although not frequent, can cause a great deal of damage. There was in excess of $30,000,000.00 damage in the 1967 flood between Kearney and Columbus, much of which was in the proposed project area.

I feel the mood of the people in our rural area and in the surrounding communities of Grand Island and Kearney, have changed to the point that they are ready to face up to these challenges. We envision a project that would not only supplement irrigated water supply, stabilize ground water levels and enhance ground water quality, but would enhance municipal and rural domestic water supplies and provide fish and wildlife habitat, instream flows, public outdoor recreation and flood control. One or more of these facets of the project would appeal to every citizen of our area in addition to stabilizing the economy of irrigated agriculture.

These are some of the reasons for the strong base of support the project has throughout the valley.

As you can see, we are not talking about a single purpose irrigation project, but a multi-purpose water resources project that would address all of these needs and more.

My neighbors and I support this type of project which will meet our needs for our future in irrigated agriculture. If we do not have some solutions to our challenges, we will be faced with turning irrigated acres back to dry land.

We in the Prairie Bend Unit urge you to support $800,000.00 for advanced planning of the project.

STATEMENT OF DOUG THOMPSON, WOOD RIVER, NEBR.

I submit this testimony to the committee in regard to the funds for the pre-construction planning of the Prairie Bend Project. Your past decisions to initiate and continue to fund the study are greatly appreciated by the communities in the area. It would be a tragedy if the project were halted now.

Although the original project was conceived and promoted by irrigators in the area, Congress approved the initial study to encompass not only irrigation, but groundwater quality problems, domestic water supplies, flood control, outdoor recreation, and fish and wildlife habitat.

Since the project will withdraw a small portion of the flows from the Platte River in the "critical habitat" area of the endangered whooping crane (and several other "threatened species"), a very disproportionate amount of the funds appropriated have been used by the Bureau of Reclamation for a thorough and complete study of optimum wildlife flows and roosting area. Consequently, the Bureau's "preferred plan" (alternative 13) includes several large tracts on the Platte to be set aside and managed strictly for habitat of the endangered whooping crane.

We, the project proponents, feel this is appropriate and commend the Bureau for its efforts to make this project a totally new concept in that it would not only solve the water shortage problems of the area, but would also enhance the habitat of an endangered species.

Another new concept of the project is that it will supply irrigation water strictly through recharge of the aquifer, rather than conventional surface delivery. This plan is totally compatible since the area to be serviced is essentially all Class I, prime farmland, already irrigated by groundwater pumps.

As a third generation farmer in western Hall County, I have witnessed (and been party to) the irrigation boom, which has turned dryland, subsistent type economy into one of the most productive agricultural areas of the world. During this era, the farmers and businesses of the community have flourished because of two precious resources - our vast underground water and prime farmland. Unfortunately, I have also witnessed the decline of rural communities resulting from the current farm economic situation. The final and devastating blow will come if we lose our water supply. We farm in a semi-arid area; our prime land is of little value without water to make it flourish.

My pumping costs have already nearly tripled in the last twenty years, not withstanding pump replacement costs of $15,000 - $17,000 each. These pumping and replacement costs are again compounded in that the yield of the wells has steadily declined by 50 to 60 percent.

The future of my family and neighbors will hinge upon your decision. Please give it your utmost consideration.

Statement of the Nebraska Natural Resources Commission

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM CLIFFORD WELSH, CHAIRMAN OF THE NEBRASKA NATURAL RESOURCES COMMISSION. I REPRESENT THE SOUTH PLATTE RIVER BASIN ON THE COMMISSION, AND I AM A FARMER RESIDING AND FARMING IN WESTERN NEBRASKA.

THE NEBRASKA NATURAL RESOURCES COMMISSION IS AN AGENCY OF THE STATE OF NEBRASKA DESIGNATED TO PLAN, DEVELOP AND ENCOURAGE THE IMPLEMENTATION OF A COMPREHENSIVE PROGRAM OF RESOURCE DEVELOPMENT, CONSERVATION AND UTILIZATION FOR THE SOIL AND WATER RESOURCES OF THE STATE. THE COMMISSION CARRIES OUT ITS MISSION IN COOPERATION WITH OTHER LOCAL, STATE AND FEDERAL AGENCIES AND ORGANIZATIONS. THE COMMISSION HAS 16 MEMBERS. THE MEMBERSHIP IS COMPRISED OF ONE RESIDENT OF EACH OF THE STATE'S 12 RIVER BASINS AND ONE ADDITIONAL RESIDENT OF THE RIVER BASIN WHICH ENCOMPASSES THE CITY OF OMAHA WHO ARE SELECTED BY THE LOCALLY ELECTED MEMBERS OF NATURAL RESOURCES DISTRICT'S BOARD OF DIRECTORS RESIDING IN THE RESPECTIVE RIVER BASIN. THE MEMBERSHIP IS ALSO COMPRISED OF THREE MEMBERS APPOINTED BY THE GOVERNOR OF WHICH ONE REPRESENTS MUNICIPAL USERS OF WATER, ONE REPRESENTS SURFACE WATER IRRIGATORS AND ONE REPRESENTS GROUND WATER IRRIGATORS.

THE NEBRASKA NATURAL RESOURCES COMMISSION ANNUALLY REVIEWS FEDERAL WATER RESOURCES PROJECTS AND PROGRAMS IN NEBRASKA, AND I APPEAR BEFORE YOU TODAY TO PRESENT THE COMMISSION'S RECOMMENDATIONS.

THE NEBRASKA NATURAL RESOURCES COMMISSION SUPPORTS FUNDING IN FISCAL YEAR 1989 FOR THE FOLLOWING WATER RESOURCES PROJECTS AND PROGRAMS:

$120,000 FOR ANTELOPE CREEK FLOOD SURVEY IN LINCOLN, NEBRASKA

$5,202,000 FOR GAVINS POINT DAM AND LEWIS & CLARK LAKE OPERATIONS AND MAINTENANCE

$1,116,000 FOR HARLAN COUNTY LAKE OPERATIONS & MAINTENANCE

$300,000 FOR MISSOURI NATIONAL RECREATION AND BANK STABILIZATION PROJECT

$3,547,000 FOR PAPILLION AND TRIBUTARIES LAKES

$100,000 FOR PLATTE RIVER DEMONSTRATION PROJECT PLANS AND SPECIFICATIONS

$623,000 FOR SALT CREEK AND TRIBUTARIES LAKES OPERATIONS AND MAINTENANCE

$160,000 FOR WOOD RIVER FLOOD SURVEY IN GRAND ISLAND, NEBRASKA

$660,000 FOR FARWELL IRRIGATION DISTRICT DRAIN CONSTRUCTION

$3,000,000 FOR GROUND WATER RECHARGE DEMONSTRATIONS AT 21 SITES ACROSS THE UNITED STATES. ONE SITE BUDGETED AT $597,000 IS IN YORK COUNTY, NEBRASKA

$100,000 FOR LOUP RIVER BASIN

$14,776,000 FOR NORTH LOUP DIVERSION

$600,000 FOR O'NEILL UNIT

$800,000 FOR PRAIRIE BEND

$75,000 FOR SOUTH PLATTE-FRENCHMAN VALLEY PROJECT

$2,000,000 FOR NORTHERN GREAT PLAINS AGRICULTURAL CHEMICAL LEACHATE RESEARCH FACILITIES IN NEBRASKA. PREVIOUS TESTIMONY BEFORE THIS COMMITTEE REFERRED TO FACILITY AS NORTHERN GREAT PLAINS SOLUTE MOVEMENT LABORATORY.

THANK YOU FOR THE OPPORTUNITY TO TESTIFY BEFORE YOU TODAY. I WILL NOW BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.

I THANK YOU FOR YOUR KIND ATTENTION.

STATEMENT OF KENT O. MILLER, GENERAL MANAGER AND DISTRICT ENGINEER, TWIN PLATTE NATURAL RESOURCES DISTRICT

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM KENT O. MILLER, GENERAL MANAGER AND DISTRICT ENGINEER FOR THE TWIN PLATTE NATURAL RESOURCES DISTRICT.

NEBRASKA'S 24 NATURAL RESOURCES DISTRICTS ARE LOCAL POLITICAL SUBDIVISIONS OF THE STATE OF NEBRASKA CREATED TO CONSERVE, PROTECT, DEVELOP AND MANAGE THE NATURAL RESOURCES OF THE STATE. DISTRICTS, WHICH WERE ESTABLISHED IN 1972, CONSOLIDATED THE FUNCTIONS PREVIOUSLY PERFORMED BY SOIL AND WATER CONSERVATION DISTRICTS AND WATERSHED CONSERVANCY DISTRICTS.

THE TWIN PLATTE NATURAL RESOURCES DISTRICT IS LOCATED IN WEST CENTRAL NEBRASKA WHERE THE NORTH PLATTE RIVER AND THE SOUTH PLATTE RIVER COME TOGETHER TO FORM THE PLATTE RIVER. (See attached map)

I AM TESTIFYING TODAY IN REGARD TO A STREAMBANK STABILIZATION "DEMONSTRATION PROJECT" ALONG THE PLATTE RIVER AND ITS TRIBUTARIES, THE NORTH PLATTE RIVER AND SOUTH PLATTE RIVER IN LINCOLN COUNTY, NEBRASKA. THE "DEMONSTRATION PROJECT" IS LOCATED IMMEDIATELY ABOVE AND BELOW THE CONFLUENCES OF THE NORTH PLATTE RIVER AND THE SOUTH PLATTE RIVER WITH THE PLATTE RIVER FOR A TOTAL COMBINED AND CONTIGUOUS PROJECT OF APPROXIMATELY 46 RIVER MILES. (See attached maps)

I PREVIOUSLY TESTIFIED BEFORE THIS COMMITTEE IN 1984 AND 1985 REQUESTING FUNDS BE ALLOCATED TO SECTION 55 OF PUBLIC LAW 93-251 AUTHORITY FOR U.S. ARMY CORPS OF ENGINEERS TECHNICAL ASSISTANCE TO DEVELOP STREAMBANK STABILIZATION MEASURES FOR THIS "DEMONSTRATION PROJECT". I ALSO PREVIOUSLY TESTIFIED BEFORE THIS COMMITTEE IN 1987 TO REPORT TO YOU THAT THE DESIGN OF MEASURES WAS COMPLETED DUE TO THE COMMITTEE'S SUPPORT OF FUNDING AND THE NEBRASKA CONGRESSIONAL DELEGATION 'S PERSISTENCE WITH THE ADMINISTRATION AND TO REQUEST FUNDING FOR THE U.S. ARMY CORPS OF ENGINEERS TO COMPLETE A "STUDY OF ENVIRONMENTAL IMPACTS" AND TO PREPARE "PLANS AND SPECIFICATIONS".

THIS "DEMONSTRATION PROJECT" CONTINUES TO BE AN IDEAL DEMONSTRATION MODEL OF A TYPICAL REACH THAT WOULD BENEFIT THE ENTIRE BASIN FROM THE KNOWLEDGE GAINED. THE "DEMONSTRATION PROJECT" DESIGN CONSISTS OF 66 SITES AND UTILIZES 18 ALTERNATIVES USED IN DIFFERENT PARTS OF THE

COUNTRY OR IN THE LABORATORY THAT WILL SHOW THEIR EFFECTIVENESS ON THE PLATTE RIVER SYSTEM. THIS REACH EXPERIENCES SEVERE STREAMBANK STABILIZATION PROBLEMS ANNUALLY AND WOULD THEREFORE PROVIDE IMMEDIATE BENEFITS FOR DEMONSTRATION AND STUDY. THE DESIGN OF MEASURES IS BY THE RIVER EXPERTS, THE U.S. ARMY CORPS OF ENGINEERS. CONSTRUCTION OF THIS DEMONSTRATION PROJECT WOULD ALLOW THE FEDERAL, STATE AND/OR LOCAL AGENCIES AND THE LANDOWNERS TO OBSERVE IN PLACE ALTERNATIVE DESIGNS AND TAKE HOME COPIES OF THE TECHNICAL INFORMATION OF THE ALTERNATIVES OF INTEREST TO THEM TO USE TO PROTECT THEIR RIVER BANKS AND REDUCE THEIR DAMAGE.

NOW THAT DESIGN IS COMPLETED, THERE ARE TWO REMAINING STEPS BEFORE WE CAN BEGIN CONSTRUCTION.

THE FIRST STEP IS TO ANALYZE THE DESIGN IN REGARD TO ENVIRONMENTAL IMPACTS. A CUMULATIVE ASSESSMENT STUDY OF ENVIRONMENTAL IMPACTS OF THIS PROPOSED PROJECT THROUGHOUT THE PLATTE RIVER BASIN HAS BEGUN. THIS ASSESSMENT STUDY WAS INITIATED IN FISCAL YEAR 1987 AND WILL BE COMPLETED IN NOVEMBER, 1988 THANKS TO THIS COMMITTEE'S TIMELY ACTION.

THE DESIGN REPORT NOTES THAT STREAMBANK STABILIZATION PROTECTION PROJECTS CAN RESULT IN A RANGE OF POSITIVE AND ADVERSE ENVIRONMENTAL EFFECTS AND THAT ADVERSE IMPACTS CAN BE MINIMIZED BY PROPER PLANNING, DESIGN, CONSTRUCTION, AND MAINTENANCE OF THE STREAMBANK PROTECTION STRUCTURES. ENVIRONMENTAL INTERESTS ARE PARTICIPATING IN THE CUMULATIVE ASSESSMENT STUDY OF ENVIRONMENTAL IMPACTS AND WE HOPE AND BELIEVE THEY WILL SUPPORT THE DEMONSTRATION ASPECTS OF THIS PROJECT.

THE SECOND STEP PRIOR TO CONSTRUCTION IS THE PREPARATION OF "PLANS AND SPECIFICATIONS" WHICH INCLUDES FINAL DESIGN AND THE IDENTIFICATION OF LAND RIGHTS AND EASEMENTS NEEDED FOR CONSTRUCTION. FUNDING FOR THE U.S. ARMY CORPS OF ENGINEERS OF $100,000 IN FISCAL YEAR 1989 WILL BE NEEDED FOR DEVELOPMENT OF "PLANS AND SPECIFICATIONS".

CONSTRUCTION OF THIS "DEMONSTRATION PROJECT" IS EXPECTED TO BE ABLE TO BEGIN IN FISCAL YEAR 1990. THE ESTIMATED TOTAL PROJECT COSTS FOR CONSTRUCTION, ENGINEERING AND DESIGN, SUPERVISION AND ADMINISTRATION AND MONITORING AND EVALUATION IS $5.4 MILLION. THIS DOES NOT INCLUDE LAND RIGHTS OR EASEMENTS.

THE PROJECT HAS GOOD LOCAL SUPPORT. ON APRIL 22, 1986 THE U.S. ARMY CORPS OF ENGINEERS DESIGN TEAM PARTICIPATED IN AN OPEN HOUSE IN NORTH PLATTE. THE OPEN HOUSE PROVIDED THE LANDOWNERS OF EACH PROPOSED SITE AN OPPORTUNITY TO MEET INDIVIDUALLY WITH THE DESIGN TEAM AND VIEW THE PRELIMINARY DESIGNS. SIXTY-THREE INDIVIDUALS CAME TO THE OPEN HOUSE ALL OF WHOM SUPPORTED THE PROJECT. EACH INDIVIDUAL HAD A MINIMUM OF AN HOUR WAIT FOR THEIR TURN AND NO ONE LEFT OR COMPLAINED.

I WANT TO THANK THE COMMITTEE FOR THE CONTINUING SUPPORT FOR THIS STREAMBANK STABILIZATION "DEMONSTRATION PROJECT". I ALSO WANT TO ACKNOWLEDGE AND THANK BEFORE THIS COMMITTEE OUR FINE SENATORS JAMES EXON AND DAVID KARNES AND THE LATE SENATOR EDWARD ZORINSKY FOR THEIR CONTINUED SUPPORT AND DEDICATION TO NATURAL RESOURCES IN NEBRASKA AND THROUGHOUT THE ENTIRE UNITED STATES.

STATEMENT OF NEBRASKA STATE SENATOR ELROY M. HEFNER

Dear Mr. Chairman:

I wish to go on record as being in support of the Missouri River Bank Stabilization Association's efforts to obtain funding for the National Recreation River, that 59-mile section of the Missouri River from Gavins Point near Yankton, South Dakota to Ponca State Park near Ponca, Nebraska.

Please accept this letter in lieu of my appearance before your Committee and enter it as part of the record of the proceedings in this matter.

STATEMENT OF ROBERT B. CROSBY, FORMER GOVERNOR OF NEBRASKA

Dear Senator Johnston:

As a former Governor I have learned about the complete elimination of general investigations and planning funds for the several project activities in Nebraska.

Each of the areas under current investigation by the Bureau of Reclamation in Nebraska need to be continued if Nebraska's leaders are to have the opportunities to make the decisions necessary for this state's resources future.

In particular, general investigations with regard to the Prairie Bend Unit are of critical importance. Prairie Bend, as the project is presently presented, has an opportunity to be the true multi-purpose water resources project that all interests in the water community have been contemplating for years. The project has had substantial local support through cash distributions and in-kind services provided by natural resources districts in the area along with other local sponsors, environmental organizations and the State of Nebraska.

It is respectfully urged that your Committee recommend continued planning funds for Nebraska including at least $800,000 for the Prairie Bend Unit in Nebraska's Platte River valley.

With highest personal esteem, I am

ADDITIONAL STATEMENTS SUBMITTED FOR THE RECORD

Senator HATFIELD. The subcommittee has also received numerous other statements covering projects in this region of the country which, without objection, will be incorporated into the record at this point.

[The statements follow:]

LETTER FROM GOV. JAMES R. THOMPSON OF ILLINOIS

April 15, 1988

Honorable J. Bennett Johnston
United States Senator
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
131 Dirksen Senate Office Building
Washington, D. C. 20510-6025

Dear Senator Johnston:

Attached please find copies of the State of Illinois' proposed project list for the FY 89 budget of the Corps of Engineers. I ask your consideration of and favorable action on this request.

The attached list identifies those Corps of Engineers projects of highest priority to the State of Illinois. Five state agencies reviewed these projects and found them worthwhile based on need, cost, local sponsorship and Corps interest. The list includes both items in the President's FY 89 budget request and others that we propose for special consideration.

I recommend inclusion of all these projects in the FY 89 Energy and Water Development Appropriations Act. Should you require any supporting documentation for these projects or other information, please do not hesitate to contact my Washington office (202/624-7760). Please include this correspondence in the hearing record of the Subcommittee.

Sincerely,

James R. Thompson
GOVERNOR

STATE OF ILLINOIS
TESTIMONY ON APPROPRIATIONS
FOR
U.S. ARMY CORPS OF ENGINEERS
CIVIL WORKS PROGRAM
APRIL 1988

The State of Illinois supports the following projects which are contained in the President's fiscal 1989 budget.

SURVEYS

Alexander and Pulaski Counties	$ 300,000
Des Plaines River	200,000

PRECONSTRUCTION ENGINEERING & DESIGN

Locks and Dams 52 and 53	2,500,000
Loves Park	209,000
McCook and Thornton Reservoirs	1,425,000
O'Hare Reservoir (CUP)	365,000

Section 401 of the Water Resources Development Act of 1986 authorized a flood control reservoir of at least 1050 acre-feet. The funds should be used for engineering and design for a reservoir of 1050 acre-feet or larger, not one smaller.

CONSTRUCTION

Alton to Gale Levees	1,000,000
East St. Louis	3,000,000
Lock and Dam 26 (R)	50,000,000
Lock and Dam 26 - Second Lock	13,000,000
North Branch Chicago River	4,000,000
South Quincy L & DD	3,600,000
Upper Mississippi River Environmental Management Program	7,000,000

OPERATIONS AND MAINTENANCE

Illinois supports the Corps' budget request for continued adequate maintenance and operation of navigation, flood control and multiple purpose projects in and bordering the State.

In addition to the projects in the President's budget for which we have indicated support, the State of Illinois also has additional needs and priorities which are listed below.

Great Lakes Shoreline Protection. Section 706 of the Water Resources Development Act of 1986 authorizes $3,000,000 for studies of the Great Lakes water levels, erosion, and shoreline protection. The Illinois shore of Lake Michigan is especially vulnerable to erosion and wave damage during high lake levels, and detailed studies are needed to develop means of protection. We request that $750,000 be appropriated now to initiate these studies.

Dam Safety. Title XII of the Water Resources Development Act of 1986 gives the Department of the Army appropriation authority of $16,000,000 per year for each of the next 5 years for the enhancement of dam safety efforts nationally. The State of Illinois strongly urges full funding of this authority, which includes the following:

$13,000,000 for matching funds for state dam safety programs,
$ 500,000 for training of state inspectors,
$ 2,000,000 for dam safety research, and
$ 500,000 for dam safety inventory.

St. Louis Harbor. The State recommends $1,200,000 for Preconstruction Engineering and Design of the St. Louis Harbor project. The construction of a new harbor on the Chain of Rocks Canal in Illinois will help alleviate a critical shortage of riverfront sites suitable for barge operations in the bi-state St. Louis metropolitan port, and the construction of a dike structure on the St. Louis side will reduce the adverse effects of sedimentation at existing Missouri docks. The harbor construction project does not involve the creation of additional flood-free land; the land behind the harbor is already levee-protected.

Illinois Beach State Park. Illinois urges funding of $500,000 for the Preconstruction Engineering and Design phase of the shore protection authorized for Illinois Beach State Park. The extreme high lake levels of

Lake Michigan and erosive wave action threaten not only this irreplaceable park which has in excess of 2 million visitors per year, but also the first designated Nature Preserve in Illinois.

Des Plaines River Wetlands Project. Illinois also urges that the Corps support the continuation of the Des Plaines River Wetlands Research Project with an $800,000 appropriation in FY 89. This research project will produce detailed design criteria and management programs for re-creating and maintaining wetlands, and will determine sediment control, water quality and flood control benefits from wetlands restoration.

Great Lakes Commodities Marketing Board. Section 1132 of the Water Resources Development Act of 1986 provides for establishment and funding of the Great Lakes Commodities Marketing Board. We request $150,000 be appropriated to provide the Federal share of the Board's expenses.

Upper Mississippi Environmental Management Plan. Section 1103 of the Water Resources Development Act of 1986 authorized nearly $16 million for FY 88 and nearly $18 million for FY 89 to implement environmental recommendations in the Master Plan. In FY 88 a little more than $5 million was provided. The budget request for FY 89 is only $7 million. This program should be pursued at or near the authorized level. The Corps' capability is reported as $12.4 million. We, therefore, request an additional $5.4 million for the Upper Mississippi River Environmental Management Program.

STATEMENT OF THE IZAAK WALTON LEAGUE OF AMERICA

The Izaak Walton League of America is a national non-profit membership organization dedicated to the preservation of America's natural resource heritage for the benefit of present and future generations. The League has over 46,000 members nationwide in 376 chapters and 20 state divisions. Over 14,000 of these members live in the states of the Upper Mississippi River Basin: Illinois, Iowa, Minnesota, Missouri and Wisconsin.

Since its founding in 1922, the Izaak Walton League has made the protection of the living resources of the Upper Mississippi a top priority and continues to do so. These living resources are described in the U.S. Fish and Wildlife Service's Fish and Wildlife Coordination Act report for Lock and Dam (Replacement) Second Lock as follows:

> The heavily forested floodplain and islands and diverse aquatic areas of the UMRS provide valuable fish and wildlife habitat for the benefit of the region and the nation. The Upper Mississippi River mainstem is the focal point for one of four major migration routes, or flyways, for millions of North American birds (over 300 species). In addition, ten federally listed threatened or endangered animal or plant species are found along the UMRS, as well as over 90 species that are listed by the bordering states as threatened, endangered or of special concern. The UMRS waters are home to over 150 species of fish and 50 species of freshwater mussels. The river corridors also provide habitat for many mammals, reptiles, and amphibians. The Service manages over 80,000 acres of land and 150,000 acres of water on five UMRS National Wildlife Refuges, for the benefit of fish and wildlife on both the mainstem and tributaries. Additional lands and waters are managed by the state conservation agencies. Finally, the UMRS is an important national recreation and commercial fish and wildlife resource. Economic benefits generated by this resource may total well over $1 billion annually, of which approximately 37 percent is due to sportfishing, 61 percent pleasure boating and non-consumptive recreation, 1 percent waterfowl hunting, and 1 percent commercial fishing and trapping.

In keeping with our concern for the long term viability of these resources, the League wholeheartedly supports the implementation of the Upper Mississippi River System Environmental Management Program (EMP) as authorized by Congress in the "Upper Mississippi River Management Act of 1986" (Section 1103, P.L. 99-662). The program has a ten year life span with a total authorization of $191.45 million. For Fiscal Year 1989 (FY'89) the authorization is $18.56 million. The League strongly recommends that this committee appropriate at least $12 million for the program in FY'89.

It is that same concern for the Basin's living resources that compels the League to continue its opposition to the construction of the second lock at Lock and Dam 26 (Replacement), also authorized by P.L. 99-662. We feel that the project is unnecessary and if constructed could lead to increased degradation of the biological resources of the Upper Mississippi. We urge that the committee withhold further funding for the construction of this project and direct the Army Corps of Engineers to re-evaluate the project's economic justification. We also recommend that the committee direct the Corps to prepare an adequate fish and wildlife mitigation plan prior to the project's construction. Our reasons for this request are contained in the attached report titled, "Wasting Taxpayers' Dollars" prepared by the League's Upper Mississippi Regional Representative, Paul W. Hansen. We request that the report and the attached editorial from the St. Louis Post Dispatch be included in the hearing record along with this statement.

The Environmental Management Program is comprised of five components: habitat enhancement and rehabilitation; long-term resource monitoring; recreation development; recreation economic impact study; and traffic monitoring. By far, the bulk of the authorized funding is for the habitat rehabilitation and enhancement and the long term resource monitoring, the program's most important components for assuring the protection of the Upper Mississippi's living resources.

The construction of the habitat rehabilitation and enhancement projects will begin to mitigate damage to the natural living resources of the system resulting from decades of commercial navigation and sedimentation. The importance of this component of the program was pointed out by the Environmental Report accompanying the Comprehensive Master Plan for the Management of the Upper Mississippi River System, as authorized by P.L. 95-502 and approved by Congress in Section 1103 of P.L. 99-662.

That report concluded that even if the navigation traffic does not increase, as it may with the construction of the second lock at Lock and Dam 26, most of the

river's productive backwater habitat areas will be lost over the next fifty years due to sedimentation resulting from current levels of commercial navigation traffic. The authorized rehabilitation and enhancement measures are designed to prevent or slow this process.

The Longterm Resource Monitoring Program (LTRM) will provide much needed additional information regarding the status of the Basin's natural resources. This component will assure that those responsible for making decisions regarding the management of the Upper Mississippi System will have accurate information on the health and status of the Basin's biological resources and habitat. In addition, the LTRM and the Habitat Rehabilitation Enhancement Program are inter-linked, in that, the monitoring program will track the success of rehabilitation and enhancement projects to ensure they are as effective as possible.

We feel that he recreational components of the EMP are essential to the mandated balanced management of the system and we support their funding and implementation. We agree with the position of the Upper Mississippi Basin Association regarding the need for their funding as well as the Association's view that the administration's policy of not pursuing any recreation projects is inconsistent with multiple purpose management of the system as mandated by Congress. We also urge that this subcommittee include the language recommended by the Association, directing the Secretary of the Army to pursue the recreation components of the EMP.

It is important that the navigation traffic monitoring program be fully funded and implemented to ensure that any efforts undertaken to expand the navigation capacity of the system are fully and accurately justified.

Finally, in enacting Section 1103 of P.L. 99-662 Congress has made a commitment to the American people that the Upper Mississippi River Basin will be managed to protect the integrity of its living resources as well as its capability to provide a means of commercial navigation. In enacting Section 1103 of P.L. 99-

662 the 99th Congress recognized the importance of the natural resources of the river to the nation. Section 1103(a)(2) states:

> To ensure the coordinated development and enhancement of the Upper Mississippi River System, it is hereby declared to be the intent of Congress to recognize that system as a nationally significant ecosystem and nationally significant commercial navigation system. Congress further recognizes that the system provides a diversity of opportunities and experiences. The system shall be administered and regulated in recognition of its several purposes.

In order to fulfill that commitment Congress must fund the EMP at or close to its authorized level over its ten year life span. The League appreciates that last year the Appropriations Committees provided $5.165 million for the EMP, one million dollars more than the administration requested. However that figure was significantly below the $10 million figure those who supported the EMP felt was necessary for the program to make significant early progress. Since, funds not appropriated cannot be used in future years, it is crucial that much more of the authorized funds be appropriated in order for the program to fulfill its potential in protecting the living resources of the Basin. Funds must be made available for the project planning in FY'89 so that vital habitat projects can be constructed within the authorized time frame. An appropriation of at least $12 million or more for FY'89 would be a significant step towards assuring that the EMP will achieve its fully authorized potential as well as towards the fulfillment the commitment Congress made in 1986. If the appropriation falls short of that mark and continues to do so in these critical early years of the program, then the commitment Congress made to the American people will go unfulfilled.

WASTING TAXPAYER DOLLARS

The Locks and Dam 26 Second Lock Project

on the Upper Mississippi River in Alton, Illinois

By

Paul W. Hansen

IWLA Upper Mississippi Regional Representative

November 2, 1987

Since the passage of PL 99-662, The Water Resources Infrastructure and Development Act, new information has become available that makes it possible to document that construction of a second lock at Locks and Dam 26 in Alton, Illinois is at least a $400 million waste of taxpayer dollars. A first 1200 foot lock, now being completed, will provide more than 50 percent extra locking capacity over what was needed last year.

This project is neither necessary nor economically justifiable. Within weeks of the passage of PL 99-662, Corps officials from the St. Louis District COE in charge of the project acknowledged to the EPA and others that the navigation capacity provided by the second lock will not be needed until, at least, well into the 21st century.

Even the barge industry indirectly acknowledges that this project is not needed. In a March 30, 1987 letter to the Corps, the American Commercial Barge Line Company's Senior Vice President W.N. Whitlock states: "It is simply not true that the second lock will increase navigation on the Upper Mississippi River System. Just to reach the projected 1990 baseline tonnage of 128 million tons, total freight passing through the lock will have to increase 17 percent <u>each year</u> from the 1985 level of 57.3 million tons. Such an increase would be phenomenal. Thus it cannot be expected.

"Further, the second lock will not contribute to increased navigation unless and until the capacity of the 1200 foot chamber is surpassed. The capacity of this lock is estimated at 94 to 100 million tons annually. We are currently locking substantially less than that amount and will do so for the foreseeable future. Indeed, the performance monitoring system shows a recent peak year in 1983 with 73.6 million tons passing through Lock 26. So not only are present tonnages much lower than anticipated, no true increase in navigation should be expected for many years."

Throughout preparation of the Draft Environmental Impact Statement for the second lock, the Corps has refused repeated requests from EPA, USFWS, several states and conservationists to reevaluate the need and economic justification of the second lock. Indeed the Master Plan for the Management of the Upper Mississippi River System recommends: "If beyond the studies completed to date, an additional EIS able to withstand legal challenges is required, additional economic studies would by that time also be appropriate to reaffirm the economic justification of the project, including optimizing its size" (Master Plan p. 162). The Corps continues to refuse to "reaffirm the economic justification of the project," despite evidence that the outdated data from the Master Plan overestimates benfits of the project by several times. There is also new evidence that by using outdated traffic projections and by ignoring tangential project costs, the Corps has grossly inflated the project benefits.

Corps Traffic Projections are Grossly Inaccurate

The Corps insists on basing second lock benefits on traffic projections from 1980 Master Plan data. The great disparity between actual and projected traffic levels over the past few years shows this data to be completely unreliable. Actual tonnage (figures in millions of tons) passing through Locks and Dam 26 over the past few years is significantly below projections:

Year	Projected tonnage	Actual	Difference
1984	74.96	70.67	-7.29
1985	80.20	57.32	-22.88
1986	82.50	61.70	-20.80

The Corps' projected 1990 tonnage for Locks and Dam 26 is 100 million tons, which would represent an increase of over 60 per cent in the next four years. This is a totally unrealistic scenario given the plunge in traffic over the past three years.

Deregulation of railroads and decreased agricultural activity in the region are considered to be the prime reasons for the tonnage decrease. Both appear to be relatively permanent changes in the trends affecting future shipping needs.

True Costs of Project Much Higher and Not Considered in Assessment of Project Benefits

Although the cost of the second lock is listed at $285 million, the benefits are dependent on extensive rehabilitation of the rest of the Locks and Dams on the

UMR system. The Corps has already embarked on a "Major Rehabilitation Program" at a total cost of roughly $300 million. Without this Major Rehabilitation Program, (MRP) the second lock's economic benefits cannot be achieved. U.S. EPA comments on the second lock Draft Environmental Impact Statement confirm the connection between these projects. "National Economic Development (NED) benefits appear to be calculated for a system-wide 50 year project life. We do not believe that projected traffic levels can be maintained without substantial rehabilitation of the aging upstream locks and dams." In other words, much of the $300 million MRP is a hidden cost of the second lock project because the benefits of the second lock are dependent on these costs.

In spite of repeated requests by USFWS and EPA, the Corps continues to refuse to consider the financial and environmental costs of the MRP in assessing the second lock project, even though NEPA regulations clearly require that "closely related" projects should be discussed in the same impact statement. Clearly, such a consideration would provide a more realistic but substantially lower benefit estimate for the second lock project.

Much of the MPR itself is unnecessary and a waste of taxpayer dollars. The Corps justification of many features of the MRP with the claim that they are needed to address safety hazards is in conflict with assertions in the second lock DEIS. In assessing the potential for increased barge spills due to increased traffic, the Corps states "Accident rates in tow operations are generally low compared with other commodity transportation modes, ranging from 0.0002 to 0.0008 accidents per transit" (DEIS-132 from DOT, 1979). If accident rates are this low, we question the necessity of spending about $150 million (roughly the portion of MRP that is not actual maintenance but new construction projects) to address safety hazards.

Mitigation Costs are Not Considered

The U.S. Fish and Wildlife Coordination Act Report estimates that (without a significant effort to avoid and minimize) providing mitigation for second lock project impacts could cost from $29 to $75 million annually--another expense not considered in the economic justification of the second lock. The

Mississippi River recreation annually contributes over $1 billion to the local economies. Mitigation is necessary to prevent the erosion of that resource base and economic benefit.

It should be noted that in spite of repeated statements from Members of Congress that mitigation will occur with PL 99-662 projects, the Corps contends that the mitigation requirements of Section 906 of P.L. 99-662 do not apply to the Locks and Dam 26 second lock project, due to a loophole in Section 906 (A)(1).

Congress Has Been Misled by Claims of $90 million Savings from Timely 2nd Lock Construction

The Corps repeated justification for the the second lock has included the unproven claim that $90 million could be saved by building the second lock in step with completion of the 1200 foot lock now under construction. In a document obtained from the Corps under a Freedom of Information Act request, "Supplement No. 5 to Design Memorandum No. 2 General Design," it is clear that another alternative is available.

Coffer dams, which are used to de-water construction areas, would be in place for three years during the construction of a second lock. Were Congress to delay appropriations for the second lock until new traffic projections and a new economic justification could be obtained, these coffer dams could be left in place during the interim--saving the bulk of the $90 million reported to be at risk.

Conclusion

At a time when our nation desperately needs to cut its budget and reduce it deficit, it is critical that questionable appropriations be closely scrutinized when there is reason to believe these appropriations are wasteful. It is the contention of the Izaak Walton League of America that an investigation of the second lock economic justification, by the General Accounting Office or other independent agency, would show clearly that the benefits of this project are highly questionable and should be updated before Congress commits $300 million, in addition to close to $200 million in indirect costs, of the taxpayers dollars to a project that the Corps and the barge industry acknowledge is not needed.

THE ST. LOUIS POST DISPATCH

EDITORIALS

WEDNESDAY, JANUARY 20, 1988

Stop The Corps' Second Lock

The Army Corps of Engineers' plan to build a second lock on the Mississippi River near Alton makes no sense. The project would cost between $280 million and $400 million, would cause damage to the environment that would take billions of dollars to attempt to mitigate and would not even be needed until well into the 21st century, if then.

According to a report issued by the Izaak Walton League of America, the corps duped Congress in its arguments to get money to build the second lock. The corps overestimated future traffic needs, the league said, going beyond what the barge companies themselves had forecast.

The corps, furthermore, has no plan to repair the environmental consequences of building the second lock. Among the expected effects: increased sediment in the river and its channels, destruction of the habitat of animals both in the water and on shore; erosion of river banks; and increased numbers of fish and their larvae killed by towboat propellers. The corps has done no analysis of the lock's environmental impact — but it promises to study this, after construction is well under way.

It's a promissory note, and not a very appealing one at that. There's no money — not for the study, much less for any damage that may require repair. Additionally, scientists and conservationists are growing more and more skeptical of the very idea of trying to mitigate environmental harm rather than preventing it in the first place. We're not talking about incorrigible tree-huggers here, either. The Missouri Department of Conservation and the U.S. Fish and Wildlife Service have joined private sector critics of the corps' grandiose plans.

Undaunted, the Corps of Engineers is barging ahead, promising to begin awarding construction contracts for the new lock on schedule in March.

What will it take for the corps to develop a sensitivity to environmental issues, to say nothing of fiscal ones? Given its history, there's no reason to believe it soon will. The best that can be hoped for here is that Congress will act to stop the project before the corps goes any further with it.

STATEMENT OF THE COLORADO RIVER BASIN SALINITY CONTROL FORUM

Requesting additional funds over and above the President's 1989 budget request for the Colorado River Basin Salinity Control Program.

Including:

1. $5,000,000 for cost-sharing onfarm salinity control
2. $3,000,000 for SCS and other technical assistance

In fiscal year 1988 the Congress provided $4.9 million for work associated with the recently enacted Colorado River Basin agriculture salinity control program. From Agricultural Conservation Program appropriations which the Congress had designated for salinity expenditure in past years, about $2.5 million was available in carry-over funds. Thus, about $7.5 million has been available for the program in the current fiscal year.

As this most cost-effective water quality program is in its early years of implementation, we believe that the approximate $0.5 million dollar increase is justified. There is a strong interest and active participation by farmers in the two areas where the program was initiated. A stronger commitment by farmers to implement salinity control contracts in the future is demonstrated by the large number of pending applications for participation. Also, the Department of Agriculture is proceeding with actions which will implement the Colorado River Basin Salinity Control Program in two additional geographic areas.

RECENT BACKGROUND
DETAILED FUND ALLOCATION

To date, the onfarm salinity control program is fully operational in only two geographic areas: the Uinta Basin of Utah and the Grand Valley of Colorado. Last year the Department of Agriculture adopted the rules and regulations necessary for expenditure of the line-item appropriations provided by the Congress. Many contracts have been signed and many more contracts are being prepared. In the near term, we anticipate that all of the appropriated funds will be designated for contracts with the Colorado River Basin farmers.

Without congressional action to continue the line item, no additional funds would be available for cost-sharing in FY 89. The $8 million level of appropriation

requested would allow for the continuation of the program in the Uinta Basin and the Grand Valley, and it would also allow for full implementation efforts to proceed in two additional areas: the Big Sandy area of Wyoming and the Lower Gunnison area of Colorado.

Looking further ahead, additional areas of Utah, Colorado, and Nevada have been identified as having very cost-effective salinity control onfarm program potential and are within the selected plan. These much-needed water quality programs could not move ahead unless the Federal Government, the Basin states, and the local farmers are in a position to financially participate in this cooperative program. The Basin states and the local farmers are ready to proceed with this partnership and pay at least 51 percent of the cost of this construction program.

JUSTIFICATION

The water of the Colorado River system serves some 18 million people and irrigates approximately 1.6 million acres of land in parts of the seven Colorado River Basin states. The river also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the river. Water users in the lower reaches of the river system have suffered significant adverse impacts due to the river's salinity. These impacts have been estimated to have reached over $200 million a year. Without salinity control measures and with increased demands for Colorado River water in the Basin, the river's salinity is projected to increase, further impairing the usefulness of this water supply. The economic damages suffered by the water users could double by the turn of the century.

The Basin states' concern with the river's increasing salinity led them to create the Colorado River Basin Salinity Control Forum in 1973. The Forum (whose members are appointed by the governors of the respective states) developed a salinity control policy that stated that while the Basin states continue to develop their compact-apportioned waters, salinity concentrations must be maintained at or below those levels found in the lower river in 1972. This salinity control objective is the Basin states' adopted-EPA approved water quality standard for the Colorado River. The standard was adopted pursuant to the Clean Water Act. The policy forms the basis for the cooperative federal/state, Basin-wide salinity control plan. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

After discussions involving the Federal Government, the Republic of Mexico, and the seven Colorado River Basin States, the Congress enacted in 1974 the Forum-sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act established a program to reduce the salt concentrations below Imperial Dam (the last diversion point on the Colorado River in the United States), so that

the United States could honor its 1973 agreement on Colorado River salinity with Mexico. Title I was identified by Congress as a federal commitment. The Act established a program, Title II, which allowed the States and the Federal Government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefitting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of gubernatorial representatives of the Basin states to advise the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort.

In 1984 the Congress enacted much-needed amendments to the 1974 Act. In response to issues first raised by the Forum, the amendments resulted in Public Law 98-569, which authorized additional Department of the Interior and Department of Agriculture activities needed to meet the objectives of the 1974 Act. In recognition of the proven cost-effectiveness of Agriculture's onfarm management activities in controlling river salinity in the Basin, a separate Colorado River Basin onfarm management salinity control program was authorized for the Department of Agriculture.

Consistent with the newly enacted amendments and in working with Agriculture, the Advisory Council made specific recommendations in its 1987 Annual Report relative to FY 89 funding for the salinity control efforts. The recommended funding level is the minimum amount the Council found necessary to maintain salinity concentrations at or below the adopted salinity standards.

Despite the fact that the program has been authorized and funded by the Congress, the past several years (including this fiscal year) the President's proposed budget has called for zero funding for Agriculture's onfarm program. The President's proposal of no funding for 1989 seriously jeopardizes the continued progress and effectiveness of the Colorado River salinity control efforts. It significantly restricts the continued implementation of the Department of Agriculture's cost-effective onfarm salinity control measures, which were initiated in 1979. To maintain a realistic, efficient schedule, the budget for Agriculture's onfarm program and associated technical assistance needs to be increased to $8 million.

At a time when the nation faces significant financial difficulties, it is recognized that funds for every federal program must be reviewed. The Advisory Council's funding recommendations, however, are considered to be the minimum level of funding needed to assure that salinity control efforts move forward in a timely manner. The $8 million level represents a level of appropriation already reduced from previously established desired levels. Delays will result in greater salinity pollution of the Colorado River in the short term. In addition, catch-up funding attempts in future fiscal years will ultimately cost the Federal Government much more.

STATEMENT OF THE NATIONAL WATER RESOURCES ASSOCIATION

Mr. Chairman and Members of the Committee:

I am Thomas F. Donnelly, Executive Vice President of the National Water Resources Association, I appear before this Committee today to express the Association's concerns and interests in the President's Fiscal Year 1989 Budget Request for the Bureau of Reclamation.

The National Water Resources Association (NWRA) is a nonprofit federation of associations and individuals dedicated to the conservation, enhancement, and efficient management of our Nation's most precious natural resource, WATER. The NWRA is the oldest and most active national association concerned with water resources policy and development. Its strength is a reflection of the tremendous "grassroots" participation it has generated on virtually every national issue affecting western water conservation, management, and development.

While we are cognizant of the current budget crisis and the recent Budget Summit Agreement, we believe there are several areas were adjustments can be made that will increase the productivity of the Bureau's programs and result in a long-term savings to the Federal government.

U.S. BUREAU OF RECLAMATION

CONSTRUCTION- We support the Department's policy of maintaining efficient engineering and construction schedules for projects currently under construction. However, the $698 million requested for FY-1989 will not result in full efficiency. The lowest overall cost to the Federal government can only be accomplished by funding all projects currently under construction at their maximum level. This would mean a construction appropriation of approximately $795 million in FY-1989. This level of funding would: 1) result in a greatly reduced cost to the Federal government, and 2.) bring these projects on-line sooner, thus, increasing the revenue returned to the Federal government.

I would like to call the Committee's attention to one project in particular, the Garrison Diversion unit in North Dakota. This project has a long and, for the project sponsors, painful history. In 1984 the Congress established the Garrison Diversion Unit Commission to reassess the project authorization. Environmental interests exacted

considerable concessions from the State of North Dakota and the project sponsors for their anointment of the project reformulation. Since the Congress approved the reformulation, funding of the project has limped along year after year. When the Garrison Reformulation Act was implemented the Southwest Pipeline Project was authorized under that legislation. The State of North Dakota has already spent $20 million for planning, design, and construction. The FY-1989 budget request calls for $3 million for the Southwest Pipeline Project. The appropriate funding level is $10 million. We would ask the Committee to take particular note of the funding delays on the Garrison Project and if additional funds can be found that this project be given a high priority for additional funds.

OPERATIONS AND MAINTENANCE- The 1989 budget request for O&M is quite significant. Last year we testified before this Committee as to the inadequacy of the Administration's O&M request for the Bureau of Reclamation and the Committee took positive steps to address our concerns. Under the leadership of Assistant Secretary James W. Ziglar, the Department has proposed an O&M program that addresses the critical deferred maintenance problem in a positive manner. We encourage the Committee to strongly support this proposal.

While this proposal is a major step in the right direction, we believe the best long-term solution is to take the Bureau's O&M off budget, i.e. a revolving fund concept.

Under the revolving fund concept all of the operation and maintenance expenditures would be repayed within the fiscal year. It makes sense and it assures efficiency and dependability of the existing water and power infrastructure.

It is my understanding that the Department is currently studying such a proposal. We would encourage the Committee to support such a proposal and possibly give the Department a little shove in the right direction.

SMALL LOAN PROGRAM- Last year the Administration proposed and Congress approve the sale of the Bureau of Reclamation's small loan portfolio. The loan sale could provide some of the current borrowers with a unique opportunity to prepay their existing loans at a discount. However, the Office of Management and Budget is presenting one major obstacle to this opportunity.

On February 19, 1988, OMB issued a Memorandum (M-88-13) outlining new guidelines for such discount purchase programs. The new guidelines prohibit borrowers from using tax-exempt financing to prepay existing loans.

Last year the Administration conducted a similar sale of the Community Loans Program of the Farmers Home Administration. In that sale borrowers were allowed to use tax-exempt financing to prepay their loans. We see no justification for borrowers under the

Bureau of Reclamation sale to be denied benefits extended to borrowers under the Farmers Home Administration sale.
We are currently seeking to get legislation introduced in both the House and Senate addressing this matter. I believe that this legislation will be introduced within the next few days.
I have attached a copy of our most recent draft for the Committee's review. We trust that the members of the Committee will be supportive of our legislative proposal.

COLORADO RIVER SALINITY CONTROL- The Colorado River provides important water supplies for 17 million Americans in the seven basin states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. Those people live in the most arid portion of the United States and rely heavily upon the Colorado River for municipal and industrial water supplies, as well as for irrigation for 1.5 million acres of prime agricultural land. In addition, the Colorado River supplies water for half a million people and half a million acres of irrigated farm lands in the Republic of Mexico. We would urge the Committee to support the level of funding the Administration has requested for the Colorado River Basin Salinity Control Projects.

ATMOSPHERIC WATER RESOURCES MANAGEMENT PROGRAM- We would urge the Committee to support the level of funding proposed by the Administration for the Atmospheric Water Resources Management Program.

OMB SEPARABLE ELEMENTS B/C ANALYSIS- The Office of Management and Budget is currently applying project evaluation criteria established for the evaluation of separable elements of Corps of Engineers projects in H.R. 6 to Bureau of Reclamation projects. Very few of the Bureau's projects lend themselves to this type of evaluation. It would be like evaluating separate features of a 747 and deciding that the wings were not justified on a benefit/cost basis.
This type of evaluation was recently used by the OMB to deny funding for the Davis Creek Dam feature of the North Loup Division (Pick-Sloan), after the Congress has specifically designated funding for the Davis Creek Dam in last year's appropriations bill.
We would urge the Committee to address this issue in its deliberations on the FY-1989 budget.

RELATED AGENCIES

WATER SUPPLY DATA ACQUISITION- We would ask the Committee to provide sufficient funding and staffing to allow the Soil Conservation Service, the Geological Survey, and the National Weather Service to continue to provide precipitation, temperature, snow surveys, and stream flow watershed data, and water supply forecasts, in a cost-effective manner to all interested entities; and to retain the related gathering, interpretive, dissemination and archival series provided by those agencies.

STATEMENT OF THE AMERICAN FARMLAND TRUST

We appreciate this opportunity to present testimony to the Senate Energy and Water Subcommittee of the Appropriations Committee.

American Farmland Trust (AFT) is a private, not-for-profit organization dedicated to the conservation of our agricultural land resources. AFT accomplishes its goals by working with farmers, private organizations and local governments across the country to help them address land resource management and rural development concerns. Since its founding in 1980, AFT's membership has grown to number 40,000 individuals.

In this testimony, AFT is concerned with the transfer of federally developed technology to local governments to facilitate their management of natural resources and rural development. We are requesting federal funding of $1.5 million to support this technology transfer.

The complexity of natural resource decisions facing rural leaders increases every year. Rural communities are rapidly becoming "preferred locations" for landfills, hazardous waste sites, and energy development. The need to limit transportation costs often places such land uses in direct conflict with the needs of farming enterprises in non-metropolitan agricultural counties that are close to urban centers.

These conflicting pressures felt by rural communities have prompted AFT to initiate a new program to help deliver affordable, cost-effective, easy-to-use, computer-based Geographic Information System technologies to local decisionmakers.

Geographic Information Systems (GIS) are new computerized technologies that enable decision makers to comprehensively manage natural, cultural and economic resources. Information about property ownership, assessment and taxation, for instance, can be directly related to water resources,

soils, agricultural productivity of farms, wildlife habitats, or historic sites.

In its 1985 survey of GIS implementation nationwide, AFT found that only 24 non-urban governments out of 3,041 counties, 16,724 townships and 6,232 Natural Resources Special Districts have acquired a GIS. Despite widespread interest in GIS technology, local governments are prevented from obtaining this decision-making tool because it is too expensive, too complex, and not open to modification to meet specific needs.

AFT proposes to promote the acquisition of GIS technology by local governments by establishing a nationwide training and support system that will deliver technical assistance about GIS and land information systems to local governments based on a specific GIS called GRASS (Geographic Resources Analysis Support System.)

Developed by the U.S. Army Corps of Engineers' Construction Engineering Research Laboratory (USA-CERL), GRASS is the only GIS software that has been developed at the taxpayer's expense and which can be transferred to localities in a consistent manner. For several years, AFT has been involved in researching the potential of GRASS, and has collaborated with USA-CERL in enhancing the software to make it more responsive to local needs and applications. AFT has chosen to work on GRASS because of its broader scope of abilities and greater flexibility over other GIS technologies currently available in the private market. GRASS :

--is in the public domain;
--is easy to use;
--can be operated in many computers;
--is extremely powerful; and
--can share data with other computer systems.

GRASS has established a good track record. In 1986, GRASS was selected by the Urban and Regional Information Systems Association as an "exemplary system in government." In addition, the National park Service and the Soil Conservation Service have adopted GRASS. The EPA, USGS, Air Force, Navy, Department of Energy and United Nations are all evaluating and testing GRASS.

Working with USA-CERL, AFT proposes to create a coalition of government, university and not-for-profit organizations to establish a training and support program for local officials and resource managers. Five regional technical centers under the direction of a Technology Support Center will be responsible for training local government representatives. These centers will be based in existing institutions such as research centers, universities, conservation districts or technology transfer organizations.

We believe the federal government should support the small cost of this technology transfer because:

--Promotion of this federal technology for use at the local level will create a set of benchmark standards by which commercially developed products can be measured. Over time, GRASS is expected to stimulate an educated consumer market among non technical communities and thus help the private sector to better fill the needs and applications required by local governments.

--Only a federally sponsored effort can guarantee wide access and adequate support systems to the local governments using this technology. The private sector does not now adequately address this need for affordable, generic and consistent support and training after their software has been purchased.

--This technology is timely and appropriate to the needs of local governments. Recent regulations imposed by federal agencies such as EPA and USDA, the Department of the Interior and the Forest Service, require sophisticated analysis of the environmental impacts of land management and uses. Local governments can only meet these requirements if they are provided with the appropriate analytical tools.

--Urban GIS and land information systems in areas such as Fairfax County, VA., Milwaukee, WI., and New York City are generally well developed because the federal government provided the initial funding. We are asking the federal government to take the same interest in non-urban communities who need the same assistance.

--The transfer of GIS technology is cost effective. This computerized technology can save counties the need to increase their staff size and expertise in order to meet these federal requirements while making wise land use decisions and avoiding future expensive mistakes.

AFT is seeking first year funding of $1.5 million to establish the network of technical offices to transfer GRASS to local jurisdictions. This amount will be doubled by matching funds from private sources. AFT and USA-CERL expect the education and technical assistance provided by this project to help expand the GIS technology market for commercial system developers. We therefore project a gradual decline in the demand for federal support each year, with the program becoming largely self-sustaining after five years.

STATEMENT OF THE CENTRAL COLORADO WATER CONSERVANCY DISTRICT

It is a great privilege for the Central Colorado Water Conservancy District to submit this written statement in support of the Box Elder Creek flood study in Colorado.

The Central Colorado Water Conservancy District respectfully requests the support of the Committee for funding under the U. S. Army Corps of Engineers Section 22 Planning Assistance Program (Public Law 93-251; Water Resources Development Act of 1974) to determine potential water resource impacts that may be expected from the development of the new Denver International Airport on Box Elder Creek. In addition, current flood protection in the basin is inadequate due to the need for rehabilitation of several structures on Box Elder Creek.

Box Elder Creek flows adjacent to the east edge of the metropolitan Denver area and will be impacted by the new international airport being planned in the drainage. New development spurred by the airport will create greater flood potential for downstream residents.

We also are concerned about the need to evaluate the feasibility of rehabilitating Bootleg, Klug, and Ireland #5 Reservoirs on Box Elder Creek downstream of the new airport. These dams have provided irrigation and flood control benefits to the area since the early 1900's, when they were built, to the 1980's when they were breached because of inadequate spillway capacity. The Colorado Department of Highways has expressed concern that Interstate Highway 76 and other state highways downstream of the breached structures are at a greater risk without the dams.

The Colorado Water Conservation Board is requesting $300,000 under the U. S. Army Corps of Engineers Section 22 Planning Assistance Program for FY 89, of which $100,000 would be designated for the Box Elder Creek Study. We support this request, and ask for your consideration and approval.

South Dakota Water Resource Projects

Senator Hatfield. Senator Daschle has sent a prepared statement accompanied by several other written statements covering South Dakota projects. Without objection, these will be made part of the record at this point.

[The statements follow:]

STATEMENT OF SENATOR TOM DASCHLE OF SOUTH DAKOTA

Mr. Chairman, on behalf of the people of South Dakota, I wish to thank you and the other members of the Subcommittee for your strong support of water development in South Dakota. This Subcommittee has been extremely responsive to our needs in the past, and I anticipate that it will again assist us in funding water development projects underway and in the planning process. The development of our water resources is, as you know, one of South Dakota's very highest priorities.

I will keep my testimony relatively brief by summarizing our funding requests. Individual project sponsors will, of course, submit their own testimony, which will provide more detailed information about the projects and the rationale behind our funding requests. In addition to this, I would be pleased to provide any additional information you might need prior to marking up the Energy and Water Appropriations bill.

I want to preface my remarks by saying that we fully recognize the tight budget constraints under which this Committee must operate, and we support your effort to meet the bipartisan deficit reduction targets reached last year by the Adminsitration and Congress. We do feel, however, that the Administration's suggested allocation of national water development resources is inequitable and that it can be improved without violating the budget agreement.

For example, while the amount of funding the White House has requested for national water development funding is $166 million above last year's level, several projects in South Dakota have been recommended for large funding cuts by the Administration. We are not asking the Committee to violate the bipartisan budget agreement, but we do respectfully urge you to distribute Corps of Engineers and Bureau of Reclamation funding fairly.

WEB Rural Water Pipeline

We strongly urge you, for instance, to reject the administration's $11 million request for construction of the WEB Rural Water Pipeline. Last year, we were most appreciative that the Subcommittee rejected the President's request for WEB and approved one which was about six times higher. We urge you to increase funding for WEB over the Administration request again this year.

Mr. Chairman, if the Bureau is truly interested in completing projects which are "substantially underway," as it has continually told this Subcommittee, we submit that it could easily finish the WEB project in FY 1989 with a $28 million appropriation. Should budget constraints make it impossible for you to appropriate that amount, however, we ask that you approve $20 million to at least extend drinking water pipe to the remainder of WEB's 25,000 customers. As you know, repayment on the project's federal loan does not begin until the project is completed, so it is not in the federal government's interest to unecessarily delay the completion of WEB.

Belle Fourche Irrigation Rehabiliation

We are supportive of the Bureau's request of $4.2 million for the rehabilitation of the "granddaddy of the Bureau of Reclamation" -- the 85-year old Belle Fourche Irrigation project. This rehabilitation work will allow Belle Fourche to make more efficient use of its existing water delivery system.

I hope that in subsequent years, as other large Bureau projects near completion, we can accelerate the construction phases of this project to make up for time we have lost during the last few years, when Belle Fourche has been placed on the "back burner" by the federal government.

James River Restoration Project

One of the most exciting water development projects underway in South Dakota is the James River Restoration project. This comprehensive project, which has earned the support of all major agriculture, environmental, and political organizations in South Dakota, will improve the beautiful James River by removing log-jams, modifying dams, removing sandbars, and improving recreational access and wildlife habitat of the James. The James and its bottomlands constitute not only an irreplaceable habitat for wildlife, but also an outstanding historical, archaelogical, geological, agricultural, and scenic resource as well.

To keep the project moving forward, we request that the Subcommittee appropriate $200,000 to complete the reconnaissance and feasibility studies, and $1 million to begin implementation of Stage I of the James River Restoration Project. The State of South Dakota has already obligated $400,000 to the project, which more than covers the state and local cost-sharing obligations required for the initial funding request for the implementation of Phase I.

Vermillion River Flood Control Study

Another dominating prairie water resource in eastern South Dakota is the Vermillion River. We are currently working with the Corps of Engineers to develop a cost-efficient means to reduce flooding on this River and to study flooding of lakes in the Vermillion River Basin. Last year, we secured authorization for a study of the River, and this Subcommittee subsequently inserted $200,000 in the Senate Energy and Water Appropriations bill for that analysis. Unfortunately, that funding was deleted from the final FY 1988 Continuing Resolution. The Vermillion River study continues to be badly needed, and we hope that the members of this Subcommittee will again support our modest request for funding this year.

Missouri River Bank Stabilization

Thanks to the efforts of this Subcommittee, we continue to enjoy considerable success in protecting the Missouri National Recreational River. This 59-mile stretch of the River is the sole remaining reach of the "wild Missouri," the River familiar to Captains Lewis and Clark which is neither channelized for navigation nor inundated by one of the mighty Missouri River hydroelectric dams. Streambank protection measures for this national treasure are badly needed, since streambank erosion is caused, in large part, by releases from the federal Gavins Point Dam.

In order to continue the excellent streambank protection work that is underway, we respectfully ask that you appropriate $1,000,000 for construction of new streambank protection structures and $200,000 for maintenance of existing structures.

Black Hills Hydrology Study

Recognizing that the Bureau has partially redirected its focus toward water management, we ask that the Subcommittee provide $100,000 to help fund an ongoing Black Hills hydrology study. This study is an effort to document the inventory of surface and groundwater within the Black Hills region of South Dakota.

Sioux Falls Flood Control Study

In 1965, the Corps of Engineers completed a flood control project for the greater Sioux Falls area, the most populous portion of South Dakota. The Corps recently advised the City of Sioux Falls, however, that the original 1965 project does not provide the needed level of flood protection for Sioux Falls' 100,000 citizens. The Corps has advised the City that a $322,000 feasibility study is needed to correct deficiencies in the design of the project. We request that the Subcommittee provide the funding needed for that key study.

Big Sioux/Lake Kampeska Flood Control Study

We support the Administration's request for $125,000 for FY 1989 to prepare a feasibility study of flood control dams on the Big Sioux River above Watertown. We are optimistic that this study will prove the feasibility of constructing a flood control structure that will provide flood reduction for people and property along the Big Sioux and Lake Kampeska.

High Plains States Groundwater Demonstration Program

We also strongly support the Bureau of Reclamation's request for a $399,800 appropriation to begin a project which will test the artificial recharge potential of the glacial-outwash aquifers in the James River basin in eastern South Dakota.

Ft. Randall Hydropower Study

The Corps has estimated that upgrading of the existing Ft. Randall Dam could provide approximately 7% more energy output from that facility. The Corps has estimated that it will cost approximately $50,000 to verify or revise this preliminary estimate to determine the feasibility of federal or non-federal involvement in such an upgrade. We, therefore, recommend that this amount be included in the FY 1989 federal budget.

Gregory County Hydroelectric/Irrigation

The law authorizing the Gregory County Hydroelectric Pumped Storage project (P.L. 99-662) calls for the federal government to determine the feasibility of irrigation and water supply features of the final Gregory project plan. As you probably know, an initial Corps benefit-cost (b-c) study of the hydroelectric portions of the project has produced a highly favorable b-c ratio.

We ask that the Subcommittee approve our request for an additional $500,000 to study the feasibility of the irrigation and water supply features of the project. State and local sponsors have already contributed approximately $358,000 to the preliminary development of this innovative project. While we recognize the Reagan Administration's philosophical aversion to the concept of federal participation in hydroelectric ventures, we respectfully ask that the Subcommittee approve our $500,000 request so that we may determine the feasibility of all portions of the project for possible development by non-federal or federal interests. It is critical to initiate this study this year, since the project's authorization will expire in four years if implementation of the project is not in progress.

Section 22 Lake and River Restoration Projects

We request that the Corps of Engineers provide $445,000 to cover laboratory testing in conjunction with various lake and river restoration projects in South Dakota. Such testing would include priority pollutant scans, bulk analyses, review of heavy metals and pesticide contamination, and inventorying of elutrients.

Mr. Chairman, thank you very much for your consideration of these high priority Corps of Engineers and Bureau of Reclamation water development project funding requests. Again, if you require additional information about any one of these projects, please feel free to contact me.

STATEMENT OF GREGORY COUNTY (SD) PUMPED STORAGE SITE MULTI-PURPOSE WATER PROJECTS CORP.

Dear Sirs:

The Corporation is formally requesting your office to submit a request to the Appropriations Committee in the amount of $400,000.00 or not less than $200,000.00 (half of what is needed) for the completion of a Feasibility Study on the Multi-Purpose Water Project that has already been started with State Funding of $150,000.00, which the B.O.R. is in the process of doing and being paid for by those State Funds.

All Local moneys ($250,000.00) are in place on this project and the Federal portion of the funding is all we lack to complete this Authorized Project study.

A sunset clause was placed on the Authorization Bill passed October 1986 and out of the five years we were given to study the project two years has already passed.

Federal Government - In support of the Project - Date of last personal meeting.

Senator Larry Pressler	South Dakota	4/14/88
Senator Tom Daschle	South Dakota	4/14/88
Congressman Tim Johnson	South Dakota	4/14/88

Mr. C. Dale Duvall, Commissioner, B.O.R. U.S. Dept. of Interior - Washington, D.C. 4/15/88
(Stated at that meeting he would not oppose the project)

Federal Government - Explanation of Project

Mr. W. David Gwaltny - Professional Staff Member Senate Appropriations Committee - Washington D.C. 4/14/88
Mr. George A. Urian - Professional Staff Member Subcommittee on Energy and Water Development, House Appropriations Committee - Washington D.C. 4/15/88
Joe Western - Staff Person to Rep. Virginia Smith of Nebraska - Washington, D.C. 4/14/88
Gene Peters - Staff Person to Senator Bill Bradly of New Jersy - Washington D.C. 4/15/88

State Government - In Support of the Project - Resolution on File

Governor George S. Mickelson - Pierre S.D.
State Board of Water and Natural Resources
Rosebud Sioux Tribe - Alex J. Lunderman President
The House of Representatives of State of South Dakota Introduced By:
Representatives - Cutler, Beddow, Bender, Edelen, Elwood, Flatt, Fosheim, Gagriel, Gleason, Hagen, Hier, Hodges, Howlett, Ingalls, Kane, Sidney Knutson, Krautschun, Krogman, Kuhler, Kumm, Kundert, Meteer, Matthew, McKillop, McNenny, Munson, Pam Nelson, Nicolay, O'Connor, Olson, Porch, Stensland, Timmer, Tubbs, Vanderlinde, Van Gerpen, Van Overschelde, Waltman, Weber, Wishard, Wood, and Zabel and SENATORS Bones, Austad, Bietz, Conahan, Diedrich, Emery, Wallace Hanson, Kellogg, Lamont, Laustsen, MCKellips, Paisley, Petersen, Ponnen, Shanard, Shortbull, Stoick, Streff, Symens and Waddell.
State Senator Doris Miner - South Dakota
State Representative William Cerny, Jr. - Burke, South Dakota
State Representative Albert Schramm - Winner, South Dakota
Gregory County Commissioners
Tripp County Commissioners
Lyman County Commissioners
Randall Resource Conservation & Development Area - South Dakota
Planning & Development District III - South Dakota
North Central Nebraska Resource Conservation and Development Area- Nebr.
City of Gregory - South Dakota
City of Burke - South Dakota
City of Platte - South Dakota
Winner Wheat Processors, Inc. - Winner, South Dakota
Tripp County Water Users District - Winner, South Dakota
Landing Creek Pipeline - South Dakota
Whetstone Pipeline - South Dakota
Gregory County Pumped Storage Site Multi-Purpose Water Proj. Corp.
2000 area citizens signed Water Project Support Certificates on file at the Gregory County Pumped Storage Site Multi-Purpose Water Proj. Office.

MULTI-PURPOSE WATER PROJECT THAT RECIEVED AUTHORIZATION IN OCTOBER 1986.

1. Gregory County Hydroelectric - Power
2. Domestic Rural Water Delivery System
   a. Indian Housing - 30 Families and new Health Clinic
   b. East Gregory Rural - 90 Families
   c. Tripp County Rural Water System - 1010 taps
3. Municipalities - 1980 populations
   a. Winner - 3472
   b. Gregory - 1503
   c. Burke - 859
   d. Herrick - 115
   e. Bonesteel - 358
   f. Fairfax - 225 TOTAL - 6532
4. Irrigation
   a. 65,000 acres (10,000 acres tribal)
   b. All of corn to be used for potential Hog and Cattle Confinement
   c. Nebraska land that joins on the South Dakota Line and one unit farms on both sides of the State Line.
5. Industrial Economic Development
   a. Hog confinement
   b. Gravel washing
   c. Gasohol plant
   d. Fish farms
   e. Cattle confinement
   f. Livestock energy factory
6. Wildlife & Pheasant Restoration (Two State Owned Lakes)

Over the past 10 years Gregory, Tripp, and Lyman Counties have spent over $200,000.00 on separate Water Projects to meet the needs of their individual areas. All of the purposed projects failed to be built because of the costs involved. With a better planning process it was desided to join all the projects in the three Counties and combine them into one that would meet their needs. The Gregory County Pumped Storage Site Multi-Purpose Water Projects Corp. was formed.

This project when tied together will include 6 Counties in South Dakota and Nebraska, 6 Municipalities, 2 Rural Water Systems, 2 Indian Tribes, Indian Housing, Indian Clinic, Industrial Economic Development, 2 State Owned Lakes, Wildlife & Pheasant Restoration, and Irrigation. (Please Refer To Cover Sheet)

The estimated funding for the Feasibility Study for the Gregory County Pumped Storage Site Multi-Purpose Water Projects is $800,000.00. The Money already spent on studies in the area including studies on Tribal Lands done by the Rosebud Sioux is $250,000.00 which was all non-governmental. The State of South Dakota has made to the Corporation a Study Loan of $150,000.00. In order to meet the five year dead-line in the Authorization, the B.O.R. needs to match the above figures $400,00.00 so we can complete the Studies.

The Project is included in the Governors Water Initiative and Proposed Settlement Package, Gregory County Pumped Storage Site Multi-Purpose Water Projects falls under Authorized Projects Seeking Funding.

SUBJECT: GREGORY COUNTY PUMPED STORAGE MULTI-PURPOSE WATER PROJECTS.

ADDRESS: BOX 303, GREGORY, SOUTH DAKOTA, 57533

FROM: CATHY WERNKE, CORPORATION CHAIRMAN

Two studies are being conducted at this time. Land classification - an evaluation of land suitability for irrigation within the Gregory County Pumped Storage Project area in South Dakota.

Only those lands in Nebraska which are connected to South Dakota, where the farm site is in South Dakota and the State line cuts through a field, will be included in the study. The acreage is less than 700 acres.

John Lawson will come to Gregory after Jan. 1 st., 1988 and discuss the results of the B.O.R. study on land classification which is already completed.

Bartlett and West Engineers, Inc., 5835 S.W. 29St., Topeka, Kansas, 66614-2461, has been hired to do a need study of the Domestic, Municipal, and Industrial Water uses. The firm was hired October 19, 1987 and personal interviews were made the following week with all Towns, Rural Water systems and Industries. Six Municipalities along U. S. Highway 18 were interviewed. Records indicate Water Qualities have been a problem as well as amounts that can be pumped from some of the well fields.

Interviews with the Indian Health Service from Rosebud Reservation, for their housing projects in Gregory County, a lot of verbal information on their water problems were discussed. Some individual housing on the lands around the encampment do not have a well or they are caved in and some are not in use for other reasons. We feel there was enough information taken to know there are problems in the area. We are waiting for records from Indian Health Service to complete this part of the study.

The Milk Camp Community near Bonesteel has been investigating the Hog Confinement idea for Economic Development and income for their people. This has good potential because they don't plan to start with a large operation. It would be somthing they could add to if it shows a good enough profit. The confinement would need more water than the area could provide. The Pumped Storage Water Project could be used for this Economic Development two different ways. Either pipe it direct to the confinement or use Ponca Lake (which is on tribal land nearby) as a holding reservoir, maintaining a water level and developing this as a recreational area and at the same time take water for the Confinement.

We are working to develop a plan for water from the Missouri River. Our needs are varied but it will be used to up grade the Quality of Life for all South Dakotans living in the area.

Statement of James River Water Development District of South Dakota

TESTIMONY FY 1989 BUDGET REQUEST

Mr. Chairman and distinguished members of this subcommittee, we applaud the U. S. Congress for your continued support of James River Water Development in South Dakota. Congress has been very responsive to our State in the past with passage of the Water Resources Development Act of 1986 (P.L. 99-662) and an appropriation that is enabling the Corps to start a reconnaissance study to control tributary drainage and provide for bank stabilization.

We respectively ask that the subcommittee appropriate $200,000 for FY 1989 to complete the reconnaissance and start the feasibility studies so that Congress will have the information it needs to make an informed decision on funding of these stages of the actual project. For the limited channel cleanout stage, we are requesting $1 million for FY 1989 to implement this stage. These funds would be spent in accordance with the plan (see attached newsletter) that has been adopted by the James River Water Development District and endorsed by the State of South Dakota, James River landowners from the North Dakota border to the Nebraska border, municipalities who are dependent on the river, environmental enthusiast state wide, and South Dakota's entire Congressional delegation.

We already have in place $400,000 in local matching funds. This amount would far surpass the approximate $250,000 required to match (25% local * $1 million) the federal funds. Additionally, we request that the $3.2 million previously spent by state and local sponsors as well as the $400,000 that will be spent this calendar year be considered as cost share.

There is a real need for flood prevention measures to be initiated on the James. The James River Valley, which contains a large proportion of the economic and environmental resources of our state, has been ravaged by flood in recent years. Devastating floods have cost our people millions of dollars in personal losses and have cost the federal government millions more in federal flood relief. The citizens of the James River Valley region have been working to identify the best means to prevent future flood disasters. The completion of this federal study and the implementation of the limited channel cleanout stage are necessary to bring our efforts to culmination.

We are fully aware of the budget constraints within which Congress must operate. We wish to point out, however, that state and local sponsors have provided $3.6 million in taxes and voluntary landowner assessments toward the identification and implementation of an appropriate flood control strategy for the James. The $1.2 million we request constitutes 33% of the amount already invested by state and local sponsors in the project. In other words, for every dollar we request, $3 have already been invested in the project at the local level. Given the level of commitment already exhibited, we feel our $1.2 million request is a modest and reasonable one.

While we have provided several reasons for supporting funding of the project, one of the most significant is that history has documented time and time again that the constituency of South Dakota wants the James River restored. If we prolong the decision to fund this project, history has documented that it will be just a matter of time before our now current study and corresponding base line information becomes out dated and people will be requesting additional funds to update this study so that the river can be restored. The James River Water Development District Board feels that dollars should be spent on implementation, rather than waiting and using future dollars just to reidentify the solutions we now have.

We sincerely appreciate your consideration of this matter. If you have any questions about the James River Flood Control Project, we would be pleased to discuss the issue in more detail.

OTHER CONSIDERATIONS
JAMES RIVER RESTORATION PROJECT
FISCAL YEAR 1989 BUDGET REQUEST

1. The Corps of Engineers' schedule calls for 18 months to complete the reconnaissance study to the point where the feasibility study would begin. The corresponding date is August of 1989.

2. Congress appropriated $150,000 for the reconnaissance study in Fiscal Year 1988. The Reagan administration has recommended an additional $25,000 for Fiscal Year 1989.

3. The $150,000 FY 1988 original request and subsequent appropriation was a very preliminary number. After initiating reconnaissance study scoping meetings with the Corps of Engineers, we all recognize the scope needs to be broadened in order to address the needs of the James River Project. The study team, of which the Corps of Engineers is a part, has determined an additional $200,000 will be sufficient in FY 1989 to complete the reconnaissance study.

4. Considering the timing of final passage of the FY 1988 appropriation, the Corps was unable to initiate scoping on the reconnaissance study until March of 1988. As such, we were unable to previously identify the appropriate scope of the reconnaissance study.

5. The James River Water Development District has adopted a restoration plan which contains three stages of project development. The stages are as follows: 1) limited channel cleanout, 2) tributary drainage control and 3) bank stabilization. This plan is supported by James River landowners from the North border to the Nebraska border; municipalities who are dependent on the river; environmental enthusiast statewide; the State of South Dakota; and the entire Congressional Delegation.

6. The District is planning to begin implementation of Stage I of the project immediately as extensive study efforts have already been completed on this aspect of the project. Stages II and III will be implemented upon completion of a reconnaissance and feasibility study.

7. State and local officials are requesting $1 million to be allocated in FY 1989 so that project implementation can begin on Stage I of the project. The James River Water Development District Board in cooperation with other State agencies and officials believe that current dollars should be spent on implementation rather than waiting and using future dollars just to re-identify the solutions we now have.

8. The completion of this federal reconnaissance study and the implementation of the limited channel cleanout stage in FY 1989 is in the best interest of the federal government.

JAMES RIVER FLOOD CONTROL
AND
STREAMFLOW IMPROVEMENT FACT SHEET
FOR SECTION 320 OF THE WATER RESOURCES DEVELOPMENT ACT OF 1986

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1. Flooding on the James River inundated 21,700 acres of agricultural lands in 1984.

2. Flooding in 1984 caused $6,292,000 in damages to agricultural lands. Additionally, South Dakota highway bridge 50 was severely damaged and homes were evacuated due to flooding and flood caused bank sloughing.

3. Local and state officials are aggressively working to restore the James River for the economical and environmental benefit of present and future generations. More than $3,250,000 has been invested from state and local funds to achieve these goals.

4. Channel capacities have diminished over 50 percent in specific segments of the river when comparing the 1922 survey by W.S. Reeves to subsequent surveys in 1974 and 1982 performed by the Bureau of Reclamation and the South Dakota Department of Water and Natural Resources.

5. Rock dams are located throughout the basin - they number approximately 120 of which 50 are considered major and have a noticeable effect on flows.

6. Log jams caused by trees dying of Dutch Elm disease and falling into the river channel accumulate until large log jams are formed which restrict flow in the river and cause increased sedimentation.

7. Sediment loads brought by the tributaries to the James River cause sand bars to form. These bars obstruct the river's natural flow and reduce conveyance capacity.

8. Operation of Jamestown and Pipestem Reservoirs in North Dakota may be a contributing factor to bank sloughing and extended flooding in the northern reaches.

9. Tributary flows coming from the uplands on a steep gradient meet the virtually flat flood plain of the James River basin. In some instances the river has reversed flow in the northern reach when the tributary, the Elm River, has had large flows.

10. Poor management practices by a small minority of landowners allows tree, trash and animal waste to enter the river, causing flood and health hazards.

11. Minimum flow and flow stabilization are critical to James River water quality both from environmental outlook and the fact that the river is used for irrigation and municipal water supplies.

12. Historic records indicate that in approximately one out of ten years, Jim River flows will be reduced to zero by the month of October.

LETTER FROM JOHN J. SMITH, SECRETARY, SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

March 19, 1987

John O. Marsh, Jr.
Secretary of the Army
3E718
The Pentagon
Washington, D.C. 20310

Dear Sir:

The Water Resources Development Act of 1986 authorized a project consisting of channel restoration, improvements, and other features to alleviate flood damages on the James River in South Dakota. To obtain credit for the non-Federal share of the authorized project, Section 104 of the Act requires non-Federal interests to apply to the Secretary of the Army for consideration of work carried out by the non-Federal interests prior to enactment.

The State of South Dakota, acting on behalf of several non-Federal interests, is applying to the Secretary of the Army for consideration of work conducted along the James River. Costs incurred by these non-Federal interests during the five year period total over 3.2 million dollars. A summary and analysis of these costs is enclosed.

Although the Federal guidelines to determine whether work carried out by the non-Federal interests is compatible with a project for flood control are still being formulated, I feel that these costs are justifiable and should be credited towards the James River project.

Sincerely,

John J. Smith, Secretary
Department of Water and Natural Resources

STATEMENT OF SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

Mr. Chairman and members of the subcommittee:

We certainly recognize the need to balance the federal budget and encourage you to take the decisive action necessary to accomplish this objective. We are willing to do our part to help move forward with sound water projects. In fact, over the last few years, the state and local sponsors have made available over $20 million to fund such efforts. We are willing to work together on a partnership basis with the federal government and we ask for an equitable response in the FY 1989 budget. The following are our requests for FY 1989:

Corps of Engineers

James River Restoration - In 1984, an environmental impact statement was initiated to analyze methods of environmentally sound basin wide flood control for the James River. The James River Draft Environmental Impact Statement has been completed and the preferred alternative has been selected. The preferred plan is based upon a consensus of individuals and organizations and represents their ideas and desires for restoring the James River. This preferred alternative calls for a three stage flood control project that includes: 1) Channel clean-out and recreational and wildlife improvements; 2) Tributary drainage control, and 3) Bank stabilization.

Stage one of the restoration project consists of flood control measures such as tree and debris removal from the river bed, sandbar removal, dam modification and limited dredging. The total cost of stage one is $4.91 million. The Corps of Engineers has requested $25,000 in study funds for FY 1989. Twenty million dollars has been authorized (P.L 99-662) for implementing flood control. We are requesting a $1 million appropriation for stage one of this project and $200,000 for reconnaissance and feasibility studies for FY 1989. The federal appropriation will be used for limited channel cleanout work and for fish and wildlife and recreation improvements. We already have in place the $400,000 required to match (75/25) the federal funds. Additionally, we request that the $3.2 million spent by state and local sponsors to this point be considered as cost share in the future.

Vermillion River Basin - The Vermillion River Basin is susceptible to flooding during the spring runoff periods. In 1984, the basin experienced one of its largest floods on record. We are requesting $200,000 to be used by the Corps of Engineers to perform a reconnaissance flood control study of the Vermillion River Basin. This funding was initially included in the FY 1988 appropriations bill but was deleted in the continuing resolution. The study will be split into two parts with $150,000 dedicated toward flood control of the Vermillion River and $50,000 used to study the flooding of lakes in the basin.

Big Sioux/Lake Kampeska Feasibility Study - The Corps of Engineers has requested $125,000 for FY 1989 and we concur with this request. The Corps is preparing a feasibility study of flood control dams above Watertown. The ultimate goal is to construct a flood control structure that will provide flood reduction for Lake Kampeska and the the Big Sioux River.

Ft. Randall Hydropower Study - The Corps of Engineers has indicated on a preliminary basis that the upgrading of the existing Ft. Randall hydropower facility could result in a 7% increase in energy output. A detailed reconnaissance study must be conducted by the Corps to verify or revise this preliminary estimate. The Corps study will cost $50,000 and we recommend that such funding should be included in the FY 1989 budget.

Sioux Falls Flood Control - The Corps of Engineers completed construction in 1965 of a flood control project in the Sioux Falls area. Given current federal flood control requirements and design standards, the Corps has now indicated that the 1965 project is drastically short of providing the desired flood protection. The Corps has estimated that a $322,000 feasibility study is needed to correct the deficiencies in design. We are requesting a $322,000 appropriation for the Corps of Engineers to carry out this study.

Section 22 - We are requesting $45,000 for South Dakota to cover lab testing in conjunction with various lake and river restoration projects. Such testing should include: a) Priority pollutant scans; b) Bulk analysis; c) Heavy metals and pesticides, and d) Elutrients.

Bureau of Reclamation

Belle Fourche Rehabilitation - The Bureau of Reclamation has requested $4.2 million for FY 1989 and we strongly support this request. The $4.2 million is 10% of the estimated cost to complete the project.

WEB - The local project sponsors have requested $20 million for FY 1989, and we support their request along with authorizing legislation to increase their budget ceiling to a cost-indexed amount of $110.13 million. The Bureau's request for FY 1989 is $11,089,000. An estimated $28 million will be needed for completion.

Gregory County Pumped Storage Hydroelectric Facility - Approximately $500,000 will be needed to complete a feasibility study on the irrigation and water supply portions as required by P.L. 99-662. The State of South Dakota has appropriated $150,000 to the project and the local sponsors have spent over $208,000 on previous studies.

High Plains States Groundwater Demonstration Program - The Bureau of Reclamation has budgeted $399,800 for FY 1989 to initiate this project which will test the artificial recharge potential of the glacial-outwash aquifers in the James River basin in eastern South Dakota. We support this request.

Black Hills Hydrology Study - With the expansion of mining activity, urbanization and recreational development, there is a need for the Bureau to assist in continuing the effort to inventory surface and groundwater within the Black Hills study area. The Bureau's new priority is water management and we are requesting $100,000 for their active involvement in the Black Hills Hydrology Study.

STATEMENT OF WEB WATER DEVELOPMENT ASSOCIATION, INC.

Mr. Chairman and members of the Appropriations Subcommittee on Energy and Water Development:

This testimony is presented on behalf of the WEB Water Development Association, Inc. Board of Directors and its 4,058 members.

Action Requested of the Subcommittee

As the local contracting entity for the WEB Project, we are requesting appropriation of funds for FY-89 of $20,500,000.00.

FY-89 Budget Appropriations

The FY-89 budget proposed by the Administration includes only $11,089,000 for the WEB Project for 1989 construction. We are requesting $20,500,000 in order to complete construction projects which will enable us to install a substantial portion of the remainder of the pipeline and to provide quality water to the remaining towns and rural users currently signed up.

Engineering estimates to complete the pipeline portion of the project are:

1. Phase 5: (Roslyn, Pickerel Lake) $ 9,125,500
2. Phase 6: (Redfield, Mellette) $14,378,200

Phase 5 construction will add 540 rural users and three towns and developments. Phase 6 construction will add a substantial portion of the 625 rural users and 15 towns and bulk users.

The policy advocated by the Department of Interior is to accelerate construction of water projects which are "substantially complete" and which can be completed within one year. WEB meets every aspect of this criteria. We respectfully request that the Subcommittee provide full funding for the WEB Project in Fiscal Year 1989 in the sum of $20,500,000. The WEB Project has consistently met its construction schedule and utilized all funds provided by Congress. Construction bids have consistently came in below the Engineer's estimate. Engineering feasibility studies were completed by private engineering consultants directed by a local steering committee and paid for with local funds. These engineering studies were completed in less than two years.

Future Funding

It is anticipated that WEB will make one more request for funding under the current authorization (provided the current request is appropriated) for approximately $8,100,000 to complete the project. Those funds will be used as follows: complete Phase 6 - $3,084,600; main reservoir addition - $630,000; area meters in Phases 1, 2 and 3 - $300,000; town control systems - $972,000; mainline cathodic protection - $480,000; telemetry control system - $680,400; O & M center - $506,000; and engineering, legal, etc. - $1,447,000.

Support of Project

The need for quality water can be substantiated by the fact that 128 rural users have paid an average of $1,596.00 to add themselves in areas where construction is already complete and by requests such as from the Town of Pollock to double the amount of water they originally requested and frequent requests by rural users to increase the capacity of their services.

Repayment

Adequate funding for the WEB Project in Fiscal Year 1989 will assure early repayment of federal loans. The repayment contract between the WEB Water Development Association and the United States provides that payment of loans begins when construction is completed and the entire Project is operational. Reduced funding will delay construction and extend and delay the date when repayment will begin. WEB members eagerly await completion of the Project.

Project Summary

Construction of the WEB Project represents the first funding for a major water project in South Dakota since 1977. WEB represents a partial compensation to South Dakota for the loss of over 500,000 acres of productive farm lands which were inundated by construction of the main stem dams and reservoirs on the Missouri River under the Pick-Sloan Act of 1944. Those reservoirs provide flood control, electrical power generation, and navigation to the region and provide important barge transportation for the United States.

The WEB Project was first invisioned in 1975 by local officials in Walworth, Edmunds and Brown Counties of South Dakota, thus the Project got its name from the initials of those first 3 counties. The project area quickly grew to include 13 counties in South Dakota and parts of two counties in North Dakota. When complete, the WEB Project will serve 4,058 farms and 67 towns and bulk users. The WEB Project is larger in size than the State of Connecticut. The source of water is Lake Oahe Reservoir which is an impoundment of water created by the construction of Oahe Dam, a U.S. Corps of Engineers facility built under the Pick-Sloan Act of 1944.

The area to be served covers 5,245 square miles of land area. Over 500,000 head of livestock will receive water from the system. The project area covers about 8% of the land area of the State. Within the area over 85% of the residents are signed up to the Project. The 116 mile Main Transmission Pipeline ranges in size from 14" to 30" and is constructed of ductile iron manufactured in the State of Alabama. The 3,782 miles of Secondary Transmission Pipeline range in size from 1¼" to 12" and are made from polyvinal (PVC) manufactured in Kansas and North Dakota from a by-product of the natural gas industry (resin) which comes from the states of Louisiana and Texas.

Feasibility and Environmental Factors

The project feasibility and repayment capability were examined by the Bureau of Reclamation and the Office of Management and Budget in 1983 and approved. All construction plans are reviewed by the Bureau of Reclamation and the South Dakota Department of Water and Natural Resources before contracts are advertised for bid and contracts awarded. Historic and cultural resource surveys are completed and sensitive areas are avoided before construction begins. The WEB Project will result in no negative environmental impacts and has no local or national opposition.

Engineering, Planning and Inspection

The engineering design of the project has been completed by Bartlett and West Engineering with offices in Bismarck, North Dakota and Topeka, Kansas and Boyle Engineering Corp., Bakersfield, California. Construction inspection is performed by Resident Engineers assigned by BW/BEC and assisted by technicians hired by the WEB Association. Some of these inspectors will remain with the Project as operators when construction is completed.

Water Service

The first WEB members began receiving water on May 24, 1986. The WEB Water Treatment Plant and Phase I distribution were dedicated at a public ceremony on May 30, 1986 with Bureau of Reclamation Commissioner C. Dale Duvall as the guest speaker. From May of 1984 to December of 1988, over 3,000 miles of pipeline will have been constructed and made operational, and water service will be made available to 2,977 farm families in South Dakota and 170 farm families in North Dakota as well as 48 towns.

Economic Impact In Other States

While the WEB Project will bring the benefits of better water to South Dakota, the construction of the Project has economic impacts in other states. The pumps, pipe, motors, control equipment, and hardware needed to build the WEB Project is coming from all over the country. States like Alabama, Minnesota, Louisiana, Tennessee, Pennsylvania, New Jersey, Colorado, Ohio, North Dakota, Kansas and many others have benefited from WEB Construction. (See Exhibit 3)

Authority

The WEB Project was first authorized by Congress in September of 1980 (PL 96-355), which called for deauthorization of the Oahe Irrigation Project before construction of WEB could begin. The WEB Project was reauthorized in September, 1982 (PL 97-273). The Project Design Report was completed in September of 1983, Repayment Contracts were signed, and project construction began in October, 1983.

The total cost of the Project is estimated at $117,258,000. As of February, 1988 a total of $70,607,000 has been expended on construction of the Project. As of April 11, 1988, contracts totaling $31,000,000 have been awarded in Phases 4 and 5 and construction is presently underway.

Local Funding

Local funding for construction includes $1,000,000 in local hookup fees collected from WEB members, $3,100,000 in grant funds provided by the Oahe Conservancy Sub-district, a regional water district, a grant of $1,600,000 from the State of South Dakota, a $3,000,000 in "in kind match" provided by landowners who have granted over 14,000 acres of easement for construction purposes.

Need

The quality of ground water in the WEB area is poor, and in most cases fails to meet the Federal Safe Drinking Water Standards. Over 25% of the water consumed on farms and in towns in the WEB Project area from ground wells is not fit for human consumption. Most ground water is high in iron, manganese, sodium, sulfate, and total dissolved solids. The poor water quality causes stress of livestock resulting in reduced milk production, weight loss, dehydration, and general health problems. Ground wells are difficult to maintain and costly to replace. Artesian wells often last only 10 to 15 years and can cost from $20,000 to $28,000 to replace. For a farm family hard pressed by current economic conditions, the cost of having to replace a well adds to their struggle as they try to stay on the land.

Conclusion

We are grateful for the support this Subcommittee has given the WEB Project in the past. We have made great progress since construction began in 1983. The funding provided has been effectively used to bring the benefits of good quality drinking water to thousands of farms and ranches and municipal homes in North and South Dakota.

The importance of good quality water can not be overstated. Water makes up 70% of the human body. We rely on water for our very existance. The WEB Project is correcting a water quality problem that has plagued my area of South Dakota since the homestead days of the 1800's when the Dakota Territory was first opened up for settlement. My grandparents, and others like them, immigrated from Europe and southern Russia to the Dakota Plains to develop the prairie into farmland and build towns and communities where none existed before. Water has always been limited there. Unless you have lived in an area where water is limited or of poor quality it is hard to understand or appreciate how important good water really is.

Since the days of statehood, South Dakota residents have dreamed of harnessing the clear blue waters of the Missouri River to quench the thirst of rural areas badly in need of better water quality. By the end of 1988 the WEB Project will be 75% complete. All that is left is to follow through with the committment and provide the funding needed to complete the Project in 1989.

We hope and trust that the Subcommittee will give favorable consideration to the WEB Project and provide $20,500,000 in construction funding in the Fiscal Year 1989 Budget. We will do everything within our power to see to it that the funds provided are expended in a prudent and responsible way and that early completion of the WEB Project is secured.

WEB WATER DEVELOPMENT ASSOCIATION

BACKGROUND INFORMATION

The WEB Project has a total cost estimate of $117,258,000.00 (July, 1987 est.). Funding for the WEB Project will come primarily from the U.S. Department of the Interior, Bureau of Reclamation. The last Indexed Project Cost Ceiling (1989 Budget Request) which WEB received from the Bureau of Reclamation showed $109,891,000.00. This represented the Federal Obligation and money available from the Bureau of Reclamation for constructing the WEB Project. The remaining cost of $7,367,000.00 (117,258,000 - $109,891,000) is to come from WEB local funding. The WEB Project construction is currently within this budget and plans for completion have been set for 1990.

1. What percentage (%) of the WEB Project is complete and operational?

Response: By December 31, 1988, the WEB Project will be 75% complete (See Map Exhibit 1). A summary of WEB Project status is shown below:

Feature	Total	Complete * As Of 12/88	Percent Complete
Rural Hookups	4,026	2,977	74%
Town/Bulk Users	67	48	72%
Pumping Plant			90%
Main Storage Res.			100%
Main Pipeline			100%
Secondary Pipe	3,782	2,909	77%
TOTAL PROJECT			75%

(*See Exhibit 2)

2. What Federal funding would be needed to complete the Project in FY-89?

Response: Federal funding of $28,600,000 would complete the WEB Project.

3. How would the Administration's Budget Recommendation Impact WEB?

Response: The Administration's FY-89 Budget Recommendation would delay water service to the following areas:

Area Impacted*	County	Rural Hookups	Percent of Total Project	Town and Bulk Users	Percent Total Proj.
Phase 6	Spink	528	13%	13	19%
Phase 6	Faulk	56	2%	2	3%
Phase 6	Hand	33	1%		
Phase 6	Beadle	5	.1%		
Phase 6	Clark	3	.1%		
Members Eliminated		625	16.2%	15	22%
Total Members		4,026			

4. What funding was provided for the WEB Project in FY-88?

Response: Congress appropriated $14,100,000 in FY-88 for WEB construction. Bids have been opened and contracts awarded on contracts which will utilize all FY-88 funds.

5. What local support exists for the WEB Project?

Response: $4,000,000 in local funds are being matched and available for WEB Project construction. Also, an additional $5,400,000 in local funds available to extend project water service beyond the authorized project boundaries:

Source	Contract Required	Other Local Matching Funds
WEB Local Fees (cash)	$ 3,700,000	$ 400,000
State Loan Funds	300,000	Ø
State Grant Funds	Ø	1,600,000*
WEB Local (match)	Ø	3,400,000**
TOTAL	$ 4,000,000	$ 5,400,000

(*Grant funds approved by SD State Legislature & Governor)
(**Easements granted by landowners; 3782 mi. x 4 acres/mi. x $225/acre)

6. What health or environmental problems will the WEB Project correct?

Response: WEB will correct water quality problems. Most existing ground water sources in the area fail to meet the Federal Safe Drinking Water Standards, exceeding the recommended limits for sulfate, sodium, iron, nitrate, and bacteria.

7. When does the WEB Project begin to repay its Federal loan?

Response: Provisions of the "Repayment Agreement" between WEB and the U.S. provides that repayment on the loan begins when the entire project is completed and operational. That could be as early as December 1990 if Congress provided full funding ($28,600,000) in FY-89.

8. What impact does the WEB Project have on the economy of other states?

Response: While the WEB Project is constructed in South Dakota, the economic impacts of the project are felt in other states (See Exhibit "3").

WEB WATER DEVELOPMENT ASSOCIATION, INC.

ESTIMATED TOTAL PROJECT COSTS (MILLIONS OF DOLLARS)

Date of estimate 7/7/87

Project Component		Cost
1. Development & Construction (See attached 7/7/87 Update)		$ 98.870
2. Land & Rights		0.215
3. Legal (Design Report +5%)		1.208
4. Engineering		
Basic Services *(1)	5.141	
Additional Services *(2)	0.563	
Resident Inspection *(3)	3.955	
Subtotal Engineering	9.659	9.659
5. Interest (Design Report)		2.580
6. Equipment (Design Report +5%)		0.193
7. Contingencies *(4) (Change Order)		3.052
8. Initial O & M (Design Report +10%)		0.563
9. Initial Reserve		0.130
10. Federal Administration		0.788
TOTAL ESTIMATED COST		$ 117.258

Notes:

*(1) Construction Est. x 5.2%
*(2) BW/BEC Fees to 11/28/86 + $100,000
*(3) Construction Est. x 4.0%
*(4) 6.3% on uncompleted project items (Total Est. Cost to Date, Less Total Earnings to Date)

RURAL HOUSEHOLDS & FARMS

SERVED

AS OF 3/15/88

WEB RURAL WATER DEVELOPMENT PROJECT

County	Served As Of 3/15/88	Rural Hookups To Be Served	Total Rural Hookups
Beadle	0	5	5
Brown	95	1170	1265
Campbell	192	0	192
Clark	0	3	3
Day	0	508	508
Edmunds	387	16	403
Faulk	269	56	325
Hand	0	33	33
Marshall	0	3	3
McPherson	162	0	162
Potter	86	0	86
Spink	0	633	633
Walworth	385	0	385
Dickey County, ND	1	22	23
Sub-total	1577	2449	4026
State Line Rural Water Cooperative, Hague, ND	170	0	170
Total	1747	2449	4196
	(42%)	(58%)	(100%)

TOWNS AND BULK WATER USERS
SERVED BY
WEB RURAL WATER DEVELOPMENT PROJECT

Towns and Bulk Users	Being Served As Of 3/15/88	Population	Project Phase	County
1. Andover [1]		139	5	Day
2. Ashton		154	6	Spink
3. Brentford		91	6	Spink
4. Bristol [1]		466	5	Day
5. Butler [1]		30	5	Day
6. Chelsea	yes	41	3	Faulk
7. Conde		273	6	Spink
8. Cresbard	yes	221	3	Faulk
9. Doland		381	6	Spink
10. Faulkton	yes	981	2	Faulk
11. Ferney [1]		45	4	Brown
12. Frankfort		218	6	Spink
13. Frederick [1]		370	4	Brown
14. Glenham	yes	174	1	Walworth
15. Groton [1]		1,230	4	Brown
16. Hosmer	yes	385	2	Edmunds
17. Ipswich	yes	1,153	3	Edmunds
18. Leola	yes	645	3	McPherson
19. Mellette		192	6	Spink
20. Northville		170	6	Spink
21. Onaka	yes	70	2	Faulk
22. Pollock	yes	373	1	Campbell
23. Redfield		3,006	6	Spink

(continued)

(WEB Towns and Bulk Users - Continued)

Towns and Bulk Users	Being Served As Of 3/15/88	Population	Project Phase	County
24. Rockham		52	6	Faulk
25. Roscoe	yes	370	2	Edmunds
26. Roslyn		261	5	Day
27. Selby	yes	884	1	Walworth
28. Stratford		82	4	Brown
29. Warner[1]		322	5	Brown
30. Webster		2,417	5	Day
31. Wecota	yes	30	2	Faulk
32. Westport[1]		129	4	Brown
33. Wetonka	yes	22	3	McPherson
34. Mina Lake Rural Water Mina, SD	yes	340	4	Brown
35. Little Leola Development Mound City, SD	yes	39	1	Campbell
36. Green Acres Development[1] Bath, SD		20	4	Brown
37. Northwestern School Mellette, SD		335	6	Spink
38. Pleasant Valley Development[1] RR, Aberdeen, SD		80	4	Brown
39. State Line Water Coop. Hague, ND	yes	642	1	Campbell
40. Richmond Heights Development RR, Aberdeen, SD	yes	75	4	Brown
41. Deerfield Colony Ipswich, SD	yes	130	3	Edmunds
42. Green Acres Trailer Court RR, Redfield, SD		81	6	Spink
43. Bowdle School Bowdle, SD	yes	250	2	Edmunds
44. Farm Power Mfg.[1] RR, Aberdeen, SD		13	4	Brown

(continued)

(WEB Towns & Bulk Users - Continued)

Towns and Bulk Users	Being Served As Of 3/15/88	Population	Project Phase	County
45. Jobee Acres Development[1] RR, Aberdeen, SD		110	4	Brown
46. Rolling Meadows[1] RR, Aberdeen, SD		132	4	Brown
47. Rural Homeowners[1] RR, Aberdeen, SD		29	4	Brown
48. Clark Colony Raymond, SD		95	6	Spink
49. Melgaard Estates[1] RR, Aberdeen, SD		16	4	Brown
50. Prairiewood Development[1] RR, Aberdeen, SD		225	4	Brown
51. Hillside Colony Doland, SD		80	6	Spink
52. Spring Creek Colony Forbes, ND	yes	100	3	McPherson
Sub-total		18,169		

Towns Served As Individual Hookups

Towns and Developments	Being Served As Of 3/15/88	Population	Project Phase	County
1. Akaska	yes	54	1	Walworth
2. Athol		10	6	Spink
3. Barnard[1]		63	4	Brown
4. Bath[1]		165	4	Brown
5. Columbia[1]		161	4	Brown
6. Holmquist[1]		15	5	Day
7. Lily[1]		38	5	Day
8. Lowry	yes	22	1	Walworth
9. Loyalton	yes	10	2	Edmunds

(Continued)

(Towns Served As Individual Hookups)

Towns and Developments	Being Served As Of 3/15/88	Population	Project Phase	County
10. Mansfield [1]		150	4	Brown
11. Mina	yes	35	4	Edmunds
12. Miranda		22	6	Faulk
13. Turton		103	6	Spink
14. Verdon [1]		7	4	Brown
15. Melody Lane [1] RR, Aberdeen, SD		48	4	Brown
Sub-total		903		

TOTALS

	Town & Bulk Users Being Served As Of 3/15/88		Town & Bulk Users Total Scheduled To Be Served By Project	
	Towns #'s	Population	Town #'s	Population
Towns Served/Individual Hookups	4	121	15	903
Towns & Bulk Users	20	6,925	52	18,169
TOTAL - TOWN & BULK USERS	24	7,046	67	19,072

[1] Towns & Bulk Users that could be served WEB water by 12/88 = 48 (72%)
24 presently served + 24 served by 12/88 = 48 Total by 12/88

7,046 presently served + 4,003 additional by 12/88 = 11,049 Population

[From the Aberdeen American News, Dec. 27, 1987]

PROJECTS: CENDAK ON LONG-TERM LIST

By Bob Mercer, American News Writer

South Dakota members of Congress say they like the $760 million package of water projects that the state Board of Water and Natural Resources has recommended for federal funding.

They said Gov. George Mickelson has made the right decision in calling for a package big enough to carry statewide support yet still stand a good chance in a Congress plagued by overspending.

"I think we're doing the right things," Rep. Tim Johnson said. "It's just that the financial climate is an exceedingly difficult one to deal with."

Most of the projects on the state list were already on the drawing board or under construction before Mickelson announced the state's new strategy last August.

"There isn't a lot new on the list because we're not at a point where we can ask for anything new," Sen. Tom Daschle said. "It's probably not wise to add anything new on top."

"It's probably the only direction we can go at this moment," said Sen. Larry Pressler.

Johnson, Daschle and Pressler each met with Mickelson in recent weeks to discuss the various proposals. The list was formally recommended last week by the Board of Water and Natural Resources after hearings across the state and months of deliberations over strategy and need.

"I'm cautiously optimistic we can make some progress. I don't think we're going to get all of this at one time," Johnson said.

Mickelson seeks a settlement for the federal government's development of four dams on the Missouri River in South Dakota. Congress in 1944 approved the Pick-Sloan Act authorizing construction of the dams, but state officials claim South Dakota has received only a small fraction of the compensation promised.

A state-hired consultant estimated earlier this year that South Dakota has lost more than $1 billion in economic activity because 500,000 acres have been flooded by the dams.

Johnson said many members in the House of Representatives are unconvinced that Congress needs to uphold Pick-Sloan commitments from 40 years ago.

"You won't find many sympathetic ears that the federal government owes us anything," he said. "They read the Pick-Sloan obligations differently than we do in South Dakota."

In a significant shift of policy, the Board of Water and Natural Resources decided against keeping the CENDAK irrigation plan on the state's list of short-term goals. South Dakota members of Congress agree it was the right move, considering the mood of the federal government.

"Rural water projects are difficult, and irrigation projects are especially difficult, to gain support for," Johnson said.

Daschle said the state's decision on CENDAK falls in line with the announcement last fall that the U.S. Bureau of Reclamation was shelving its study work on the huge irrigation system. It would have served 474,000 acres of farm land with Missouri River water in

Hughes, Hyde, Hand, Faulk, Spink and Beadle counties.

Pressler, who had long called for a domestic water pipeline for the region instead of the CENDAK system, said the state board's decision was the right one. "It's very difficult to get started on irrigation projects at this time," he said. The state board put the Mid-Dakota pipeline system on its list, a move Pressler supports.

Of the projects on the state list, the WEB pipeline system in northeastern South Dakota is the closest to completion. WEB, which stands for Walworth, Edmunds and Brown counties, is an example of the shift in emphasis by Congress, with people-oriented projects now holding favor instead of irrigation.

"I think in the next 25 years our biggest need in the state is going to be clean drinking water for humans," Pressler said.

Daschle said he is optimistic about continued funding for WEB's final three years of construction and for renovation of the aging Belle Fourche irrigation system.

He also expressed optimism after congressional hearings last week on two other South Dakota projects: the $85 million Lyman-Jones, West River, Oglala Sioux rural water system and the $165 million Lake Andes-Wagner-Yankton Sioux irrigation system.

EXHIBIT 2

RURAL HOUSEHOLDS & FARMS

THAT WILL BE SERVED BY 12/88

BY THE

WEB RURAL WATER DEVELOPMENT PROJECT

County	Will Be Served By Dec. 1988	Remaining To Be Served	Total Rural Hookups
Beadle	0	5	5
Brown	1265	0	1265
Campbell	192	0	192
Clark	0	3	3
Day	175	333	508
Edmunds	387	16	403
Faulk	269	56	325
Hand	0	33	33
Marshall	0	3	3
McPherson	162	0	162
Potter	86	0	86
Spink	33	600	633
Walworth	385	0	385
Dickey County, ND	23	0	23
Sub-total	2977	1049	4026
State Line Rural Water Cooperative, Hague, ND	170		170
Total	3147	1049	4196
	(75%)	(25%)	(100%)

EXHIBIT 3

WEB Water Development
Aberdeen, SD

ALABAMA

Money Spent in AL From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
3PRS	1/86	ANNISTON	AL	M & H VALVE CO.	VALVES	4,904.00	PC - Pay Certificate
3PRS	4/86	ANNISTON	AL	M & H VALVE CO.	GATE VALVES	4,332.00	PC - Pay Certificate
3-1B	12/86	ANNISTON	AL	M & H VALVE CO.	VALVES	18,200.00	LW - Lein Waiver
1-4	9/84	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	467,625.00	PC - Pay Certificate
1-4A	12/84	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	2,015,160.00	PC - Pay Certificate
2-1A	10/85	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	2,315,000.00	LW - Lein Waiver
3PRS	5/86	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	9,450.29	LW - Lein Waiver
2-1B	9/86	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	1,907,450.00	LW - Lein Waiver
3-1A	9/86	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	992,972.00	LW - Lein Waiver
3-1B	12/86	BIRMINGHAM	AL	AMERICAN CAST IRON	PIPE	1,555,457.00	LW - Lein Waiver
1-3A	11/87	BIRMINGHAM	AL	AMERICAN CAST IRON PIPE CO.	PIPE	26,140.88	PC - Pay Certificate
4-1E	11/87	BIRMINGHAM	AL	AMERICAN CAST IRON PIPE CO.	PIPE	976,921.66	LW - Lein Waiver
1-4	12/84	BIRMINGHAM	AL	AMERICAN DARLING	VALVES	16,631.00	SB - Submittal
1-7	10/86	BIRMINGHAM	AL	AMERICAN DARLING	VALVES	21,000.00	PC - Pay Certificate
3-2B	12/86	BIRMINGHAM	AL	CAPCO PIPE COMAPNY	PIPE	160,038.56	PC - Pay Certificate
3-2B	5/86	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	10,787.35	PC - Pay Certificate
3-2B	6/86	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	283,541.04	PC - Pay Certificate
3-2B	7/86	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	70,362.12	PC - Pay Certificate
3-2B	9/86	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	90,279.16	PC - Pay Certificate
3-2B	1/87	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	44,858.01	PC - Pay Certificate
4-2F	6/87	BIRMINGHAM	AL	CAPCO PIPE COMPANY	PIPE	1,401,706.37	PC - Pay Certificate
4-1A	7/87	BIRMINGHAM	AL	POLYETUBE CORPORATION	POLYETHYLENE TUBING AND TAPE	12,988.54	PC - Pay Certificate
4-1B	10/87	BIRMINGHAM	AL	POLYETUBE CORPORATION	POLYETHYLENE TUBING & TAPE	15,778.31	PC - Pay Certificate
1-2	5/84	BIRMINGHAM	AL	U. S. PIPE	PIPE	428,986.93	PC - Pay Certificate
1-3	6/84	BIRMINGHAM	AL	U. S. PIPE	PIPE & FITTINGS	163,830.00	PC - Pay Certificate
1-3	9/84	BIRMINGHAM	AL	U. S. PIPE	PIPE	8,350.00	PC - Pay Certificate
1-3	9/84	BIRMINGHAM	AL	U. S. PIPE	PIPE	2,660.00	PC - Pay Certificate

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-3	9/84	BIRMINGHAM	AL	U. S. PIPE	PIPE	1,790.00	PC - Pay Certificate
1-3	10/84	BIRMINGHAM	AL	U. S. PIPE	PIPE	12,345.00	PC - Pay Certificate
1-3	9/85	BIRMINGHAM	AL	U. S. PIPE	PIPE	3,480.00	PC - Pay Certificate
1-3	10/85	BIRMINGHAM	AL	U. S. PIPE	PIPE	4,400.00	PC - Pay Certificate
1-3	10/85	BIRMINGHAM	AL	U. S. PIPE	PIPE	1,360.00	PC - Pay Certificate
1-7	10/86	BIRMINGHAM	AL	U. S. PIPE	PIPE & FITTINGS	59,690.00	PC - Pay Certificate
4-1B	10/87	BIRMINGHAM	AL	U.S. PIPE	PIPE	1,261,660.76	PC - Pay Certificate
4-2F	6/87	BIRMINGHAM	AL	US PIPE	PIPE	7,832.75	PC - Pay Certificate
4-1A	10/87	BIRMINGHAM	AL	US PIPE	PIPE	1,220,501.19	PC - Pay Certificate
4-2E	8/87	CENTRALIA	AL	ENGINEERING FLUID INC.	PRS'S/TYPE 4 SPECIAL METER STA	43,728.88	PC - Pay Certificate
		37 Transactions			Total Amount for AL	15,632,198.80	

CALIFORNIA

Money Spent in CA From 1/83 to 3/88

1-3	10/84	CTY OF INDUSTRY	CA	AURORA PUMP	PUMP & PARTS	85,856.00	PC - Pay Certificate
1-4A	11/84	GARDENA	CA	CORROSION CONTROL PRODUCTS	CASING END SEALS	1,160.00	LW - Lein Waiver
2-1A	7/85	GARDENA	CA	CORROSION CONTROL PRODUCTS	CASING END SEALS	1,260.00	LW - Lein Waiver
2-1B	7/85	GARDENA	CA	CORROSION CONTROL PRODUCTS	CASING END SEALS	2,931.00	LW - Lein Waiver
1-3	4/85	IRVINE	CA	UNILOC/ROSEMONT, INC.	COMPUTER EQUIPMENT	2,250.00	PC - Pay Certificate
3PRS	4/86	NEWPORT BEACH	CA	CLA-VAL CO.	CONTROL VALVES	31,167.00	PC - Pay Certificate
1-1B	12/84	SAN DIEGO	CA	ACTION INSTRUMENTS	DIGITAL DISPLAY	506.20	PC - Pay Certificate
1-3	11/86	SANTA ANNA	CA	PULSCO/DIV. OF TALO INC.	SURGE EQUIPMENT	24,500.00	LW - Lein Waiver
1-3	7/84	TORRENCE	CA	TEMCOR	RESERVIOR DOME	46,650.00	PC - Pay Certificate
1-7	10/86	TORRENCE	CA	TEMCOR	ALUMINUM ROOF	137,900.00	LW - Lein Waiver
1-1B	8/85	VENTURA	CA	FLUID KINETICS, INC.	SURGE TANK	29,214.00	LW - Lein Waiver
		11 Transactions			Total Amount for CA	363,394.20	

Money Spent in CO From 1/83 to 3/88

COLORADO

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
4-1E	11/87	AURORA	CO	CORRPRO COMPANIES INC.	ELECTROLYTIC MONITORING STA.	57,072.00	LW - Lein Waiver
1-7	9/86	CORTEZ	CO	ENVIRONMENTAL LINERS	SUBCONTRACTOR	12,000.00	PC - Pay Certificate
1-3	4/85	LOVELAND	CO	HACH CHEMICAL	CHEMICAL EQUIPMENT	6,078.00	PC - Pay Certificate
1-3	9/86	LOVELAND	CO	HACH CHEMICAL	CHEMICAL EQUIPMENT	5,500.00	PC - Pay Certificate
3-3B	3/87	STRASBURG	CO	MAUPIN SANDBLASTING & COATING	TANK PAINTING	33,201.00	LW - Lein Waiver
		5 Transactions			Total Amount for CO	113,851.00	

Money Spent in CT From 1/83 to 3/88

CONNECTICUT

1-3	6/84	NEW HAVEN	CT	BILCO	ROOF HATCH	2,900.00	PC - Pay Certificate
1-3	10/84	PLAINVILLE	CT	GENERAL ELECTRIC	ELECTRIC SUPPLIES	960.00	PC - Pay Certificate
1-3	2/85	PLAINVILLE	CT	GENERAL ELECTRIC	ELECTRICAL EQUIPMENT	16,000.00	PC - Pay Certificate
1-3	7/85	PLAINVILLE	CT	GENERAL ELECTRIC	ELECTRIC PANEL	2,100.00	PC - Pay Certificate
1-7	10/86	PLAINVILLE	CT	GENERAL ELECTRIC	ELECTRICAL SUPPLIES	3,200.00	LW - Lein Waiver
1-3	8/85	RICHMOND B. C.	CT	XYPEX CHEMICAL	WATERPROOFING CHEMICALS	5,500.00	LW - Lein Waiver
1-3	8/85	STRATFORD	CT	ASHCROFT/DRESSER	GUAGES & SWITCHES	6,000.00	PC - Pay Certificate
1-3	3/85	WATERBURY	CT	BRISTOL BABCOCK	TRANSMITTERS	10,200.00	PC - Pay Certificate
1-3	3/85	WATERBURY	CT	BRISTOL BABCOCK	ANNUBAR SENSOR	7,250.00	PC - Pay Certificate
1-3	4/85	WATERBURY	CT	BRISTOL BABCOCK	COMPUTER EQUIPMENT	16,100.00	PC - Pay Certificate
1-3	4/85	WATERBURY	CT	BRISTOL BABCOCK	COMPUTER EQUIPMENT	3,800.00	PC - Pay Certificate
		11 Transactions			Total Amount for CT	74,010.00	

GEORGIA

Money Spent in GA From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-6B	7/85	ATLANTA	GA	AMOCO FABRIC CO.	LINERS	3,147.83	SB - Submittal
		1 Transactions			Total Amount for GA	3,147.83	

IOWA

Money Spent in IA From 1/83 to 3/88

1-7	10/86	DES MOINES	IA	EFCO	CONCRETE FORMS	12,110.00	LW - Lein Waiver
4-3A	6/87	DES MOINES	IA	HYDROSTORAGE	TOTAL CONTRACT PRICE	347,800.00	PC - Pay Certificate
4-3A	3/88	DES MOINES	IA	HYDROSTORAGE	PAID TO SUBCONTRACTORS/VENDORS	189,082.80CR	AD - Addition
		3 Transactions			Total Amount for IA	170,827.20	

ILLINOIS

Money Spent in IL From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-3	1/84	ARLINGTON HTS.	IL	A. O. SMITH	RESERVOIR	47,000.00	LW - Lein Waiver
1-6B	6/85	ARLINGTON HTS.	IL	A. O. SMITH	AQUASTORE TANKS	112,724.21	LW - Lein Waiver
2-3	10/85	ARLINGTON HTS.	IL	A. O. SMITH	AQUASTORE TANKS	159,850.11	LW - Lein Waiver
3-3A	2/86	ARLINGTON HTS.	IL	A. O. SMITH	AQUASTORE TANKS	83,941.18	PC - Pay Certificate
1-1B	5/85	AURORA	IL	HENRY PRATT COMPANY	VALVE	8,402.22	PC - Pay Certificate
4-2C	10/87	CENTRALIA	IL	ENGINEERING FLUID INC	PRS'S/MASTER METER STATIONS	44,994.56	PC - Pay Certificate
4-2F	7/87	CENTRALIA	IL	ENGINEERING FLUID INC.	PRS'S AND TYPE 4 METER	32,347.12	PC - Pay Certificate
4-2F	7/87	CENTRALIA	IL	ENGINEERING FLUID INC.	BOOSTER PUMPING STATION	59,739.68	PC - Pay Certificate
3-2A	1/87	CENTRALIA	IL	ENGINEERING FLUID, INC.	PACKAGED VAULT	34,320.00	LW - Lein Waiver
1-5B	5/85	CHICAGO	IL	CERTAINTEED CORPORATION	PIPE	7,200.19	LW - Lein Waiver
1-3	2/85	CHICAGO	IL	DUNHAM-BUSH	HEATING SUPPLIES	3,500.00	PC - Pay Certificate
1-3	11/84	CHICAGO	IL	MONO-GROUP INC.	PUMP	2,600.00	PC - Pay Certificate
3PRS	6/86	CHICAGO	IL	WEIL PUMP CO.	SUMP PUMPS	2,310.00	PC - Pay Certificate
3PRS	4/86	ELMHURST	IL	VALMATIC VALVE CO.	AIR VALVES	378.00	PC - Pay Certificate
1-3	6/84	EVANSTON	IL	TAPECOAT	COATINGS	550.00	PC - Pay Certificate
3-3A	5/86	KANKAKEE	IL	AMERICAN CONTINENTAL TRANSPORT	TRUCKING	1,433.22	PC - Pay Certificate
1-3	10/85	MOLINE	IL	CATERPILLAR	GENERATOR & ENGINE	30,880.00	PC - Pay Certificate
3-3B	12/86	PLAINFIELD	IL	ADVANCE TANK & CONSTRUCTION CO	TOTAL CONTRACT PRICE	254,781.00	PC - Pay Certificate
3-3B	3/88	PLAINFIELD	IL	ADVANCE TANK & CONSTRUCTION CO	PAID TO SUBCONTRACTORS/VENDORS	186,624.99CR	AD - Addition
3-3B	4/87	PLAINFIELD	IL	PRAIRIE TANK & CONSTRUCTION CO	FABRICATED MATERIALS	65,334.00	LW - Lein Waiver
1-3	1/85	PLAINVILLE	IL	GENERAL ELECTRIC	WATER SOFTENER	2,000.00	PC - Pay Certificate
1-3	2/85	PLAINVILLE	IL	GENERAL ELECTRIC	ELECTRICAL EQUIPMENT	14,900.00	PC - Pay Certificate
1-3	10/84	ROCKFORD	IL	RICHARDS OF ROCKFORD	TRAVELING BRIDGE	91,272.00	PC - Pay Certificate
1-3	3/85	ROCKFORD	IL	RICHARDS OF ROCKFORD	ANCHOR PLATES	1,730.00	PC - Pay Certificate
1-4	12/84	SCHAUMBURG	IL	APCO	AIR VALVES	2,517.00	SB - Submittal
1-4A	4/85	SCHAUMBURG	IL	APCO	AIR VALVES	12,160.00	PC - Pay Certificate
1-7	4/85	SCHAUMBURG	IL	APCO	AIR VALVES	1,200.00	SB - Submittal
2-1A	7/86	SCHAUMBURG	IL	APCO	AIR VALVES	18,000.00	SB - Submittal
2-1B	9/86	SCHAUMBURG	IL	APCO	AIR VALVES	18,500.00	SB - Submittal
3-2B	10/86	SPRINGFIELD	IL	CONTRACTOR UTILITY COMPANY	ROCKWELL METERS	10,755.76	PC - Pay Certificate
1-5B	10/85	SPRINGFIELD	IL	CONTRACTOR UTILITY SALES	AIR VALVES	21,001.61	LW - Lein Waiver
3-2B	7/86	SPRINGFIELD	IL	CONTRACTOR UTILITY SALES	VALVES	9,036.44	PC - Pay Certificate
				32 Transactions	Total Amount for IL	968,733.31	

INDIANA

Money Spent in IN From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
3PRS	4/86	INDIANAPOLIS	IN	JENN INDUSTRIES	FANS	784.00	PC - Pay Certificate
		1 Transactions			Total Amount for IN	784.00	

KANSAS

Money Spent in KS From 1/83 to 3/88

1-3	2/84	EL DORADO	KS	GASTON CONTAINMENT	TANK LINERS	21,480.00	LW - Lein Waiver
2-2A	11/86	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	TOTAL CONTRACT PRICE	2,838,084.17	PC - Pay Certificate
2-2B	11/86	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	TOTAL CONTRACT PRICE	4,256,167.38	PC - Pay Certificate
4-2E	2/87	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	TOTAL CONTRACT PRICE	4,476,744.47	BD
4-2C	2/87	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	TOTAL CONTRACT PRICE	1,406,903.80	PC - Pay Certificate
4-2D	2/87	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	TOTAL CONTRACT PRICE	901,049.60	BD
2-2A	3/87	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	PAID TO SUBCONTRACTORS/VENDORS	1,075,507.21CR	AD - Addition
2-2B	3/87	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	PAID TO SUBCONTRACTORS/VENDORS	1,990,618.01CR	AD - Addition
4-2C	3/88	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	PAID TO SUBCONTRACTORS/VENDORS	384,944.28CR	AD - Addition
4-2E	3/88	GARDEN CITY	KS	EATHERLY CONSTRUCTORS, INC.	PAID TO SUBCONTRACTORS/VENDORS	487,263.27CR	AD - Addition
1-5B	3/85	KANSAS CITY	KS	GLAND X CO.	ROCKWELL METERS	10,050.00	LW - Lein Waiver
1-3	6/85	LENEXA	KS	BUTLER NATIONAL	TELEPHONE DIALER	7,170.00	PC - Pay Certificate
2-2A	9/86	MCPHERSON	KS	CERTAINTEED CORPORATION	PIPE	764,974.86	LW - Lein Waiver
2-2B	9/86	MCPHERSON	KS	CERTAINTEED CORPORATION	PIPE	1,627,771.32	LW - Lein Waiver
1-5B	6/86	TOPEKA	KS	BRB CONTRACTORS INC.	TOTAL CONTRACT PRICE	2,797,779.49	PC - Pay Certificate
3-2A	12/86	TOPEKA	KS	BRB CONTRACTORS INC.	SUBCONTRACTOR	324,957.96	LW - Lein Waiver
3-2B	2/87	TOPEKA	KS	BRB CONTRACTORS INC.	TOTAL CONTRACT PRICE	4,103,158.75	PC - Pay Certificate
4-2A	2/87	TOPEKA	KS	BRB CONTRACTORS INC.	TOTAL CONTRACT PRICE	1,518,212.00	BD
4-2F	2/87	TOPEKA	KS	BRB CONTRACTORS INC.	TOTAL CONTRACT PRICE	4,398,546.45	PC - Pay Certificate
3-2B	3/87	TOPEKA	KS	BRB CONTRACTORS INC.	PAID TO SUBCONTRACTORS/VENDORS	738,519.50CR	AD - Addition
1-5B	3/87	TOPEKA	KS	BRB CONTRACTORS INC.	PAID TO SUBCONTRACTORS/VENDORS	1,536,020.87CR	AD - Addition
4-2F	3/88	TOPEKA	KS	BRB CONTRACTORS INC.	PAID TO SUBCONTRACTORS/VENDORS	1,705,817.61CR	AD - Addition
ENGR	3/88	TOPEKA/BISMARCK	KS	BARTLETT & WEST/BOYLE ENG	ENGINEERING SERVICES	4,252,378.95	CH
		23 Transactions			Total Amount for KS	25,786,738.45	

KENTUCKY

Money Spent in KY From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE		AMOUNT	CODE
PSUP	5/86	CALVERT CITY	KY	AIR PRODUCTS CO.	RESIN	SEE ATTACHMENT	173,297.66	CH
		1 Transactions			Total Amount for KY		173,297.66	

LOUISIANA

Money Spent in LA From 1/83 to 3/88

PSUP	9/86	LAKE CHARLES	LA	CERTAINTEED POLYMER PLANT	RESIN - RAW PRODUCT		1,579,212.48	CH
PSUP	5/86	PLAQUEMINE	LA	OXIDENTAL CHEMICAL CO.	RESIN - RAW PRODUCT		173,297.66	CH
		2 Transactions			Total Amount for LA		1,752,510.14	

MICHIGAN

Money Spent in MI From 1/83 to 3/88

4-1A	3/88	ANN ARBOR	MI	DOUGLAS N. HIGGINS INC.	PAID TO SUBCONTRACTORS/VENDORS		1,458,337.57CR	AD - Addition
4-1B	3/88	ANN ARBOR	MI	DOUGLAS N. HIGGINS INC.	PAID TO SUBCONTRACTORS/VENDORS		1,514,737.84CR	AD - Addition
4-1D	2/87	ANN ARBOR	MI	DOUGLAS N. HIGGINS, INC.	TOTAL CONTRACT PRICE		1,388,773.50	BD
4-1A	2/87	ANN ARBOR	MI	DOUGLAS N. HIGGINS, INC.	TOTAL CONTRACT PRICE		2,099,953.80	PC - Pay Certificate
4-1B	2/87	ANN ARBOR	MI	DOUGLAS N. HIGGINS, INC.	TOTAL CONTRACT PRICE		3,319,798.10	BD
		5 Transactions			Total Amount for MI		3,835,449.99	

MINNESOTA

Money Spent in MN From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-1B	5/84	ARDEN HILLS	MN	AQUATROL	INSTRUMENTS & CONTROLS	5,154.00	LW - Lein Waiver
3-3B	10/87	ARLINGTON	MN	AERO ELECTRICAL CONSTRUCTION	LIGHTS ON TANKS	5,340.00	LW - Lein Waiver
3PRS	5/86	BURNSVILLE	MN	REESE AND ASSOCIATES, INC	FANS & DAMPERS	785.00	LW - Lein Waiver
3-2A	1/87	CHOKIO	MN	THORSTAD BROS. TILING	SUBCONTRACTOR	122,419.80	LW - Lein Waiver
1-5B	4/85	EDEN PRAIRIE	MN	WATER PRODUCTS CO.	COUPLINGS	5,053.11	LW - Lein Waiver
1-5B	9/86	EDEN PRAIRIE	MN	WATER PRODUCTS CO.	PRESSURE REGULATORS	1,051.14	PC - Pay Certificate
1-5A	9/86	EDEN PRAIRIE	MN	WATER PRODUCTS CO.	PRESSURE REGULATOR	1,051.14	PC - Pay Certificate
3-1B	11/86	EDEN PRAIRIE	MN	WATER PRODUCTS CO.	MISC. FITTINGS	66,665.00	LW - Lein Waiver
2-1A	9/85	GIBBON	MN	NORTHERN INSULATION	MANHOLE INSULATION	9,151.00	LW - Lein Waiver
2-1B	10/85	GIBBON	MN	NORTHERN INSULATION	MANHOLE INSULATION	7,068.00	LW - Lein Waiver
3-1A	5/86	GIBBON	MN	NORTHERN INSULATION	MANHOLE INSULATION	2,878.00	LW - Lein Waiver
1-1B	4/85	GOLDEN VALLEY	MN	MUELLER SALES CORPORATION	ELECTRICAL SUPPLIES	910.24	PC - Pay Certificate
1-3	6/85	HAYFIELD	MN	HAYFIELD WINDOW CO.	WINDOWS	2,660.00	PC - Pay Certificate
1-4	7/84	LAKEVILLE	MN	STAR-TEX	POLY BAGS	5,200.00	PC - Pay Certificate
1-4A	4/85	LAKEVILLE	MN	STAR-TEX	POLY BAGS	19,800.00	LW - Lein Waiver
2-1A	7/85	LAKEVILLE	MN	STAR-TEX	POLY BAGS	23,800.00	LW - Lein Waiver
2-1B	7/85	LAKEVILLE	MN	STAR-TEX	POLY BAGS	19,606.00	LW - Lein Waiver
3-1A	12/85	LAKEVILLE	MN	STAR-TEX	POLY BAGS	10,168.00	LW - Lein Waiver
3-1B	11/86	LAKEVILLE	MN	STAR-TEX	POLY BAGS	23,306.00	LW - Lein Waiver
4-1E	11/87	LAKEVILLE	MN	STAR-TEX CORPORATION	POLY-PIPE SLEEVES	12,908.40	LW - Lein Waiver
1-1B	3/84	LAYNE	MN	LAYNE MINNESOTA CO.	SUBCONTRACTOR	86,772.00	LW - Lein Waiver
1-3	10/84	LAYNE	MN	LAYNE MINNESOTA CO.	PIER FOUNDATIONS	14,380.00	LW - Lein Waiver
1-4	10/84	MARSHALL	MN	MIDWEST CONTRACTING	TOTAL CONTRACT PRICE	685,220.81	PC - Pay Certificate
1-4	3/87	MARSHALL	MN	MIDWEST CONTRACTING	PAID TO SUBCONTRACTORS/VENDORS	506,378.00CR	AD - Addition
1-1B	10/85	MINNAEPOLIS	MN	ROSEMONT	ELECTRIC SUPPLYS	837.00	PC - Pay Certificate
3PRS	4/86	MINNEAPOLIS	MN	ACTION THREADED PRODUCTS	PIPING	1,116.00	PC - Pay Certificate
3-3A	1/86	MINNEAPOLIS	MN	AMERICAN BUSINESS INSURANCE	INSURANCE	6,042.00	PC - Pay Certificate
3-3A	2/86	MINNEAPOLIS	MN	AMERICAN BUSINESS INSURANCE	INSURANCE	9,399.00	PC - Pay Certificate
1-7	7/85	MINNEAPOLIS	MN	AMERICAN EXCELSIOR CO.	EROSION CONTROL BLANKET	3,530.00	PC - Pay Certificate
1-3	1/84	MINNEAPOLIS	MN	AMERICAN MUTUAL	BONDS & INSURANCE	20,000.00	PC - Pay Certificate
3PRS	4/86	MINNEAPOLIS	MN	APPOLLO PIPING	MISC. PIPING	506.00	PC - Pay Certificate

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-3	6/85	MINNEAPOLIS	MN	AQUATROL	CONTROL SYSTEM	82,740.00	PC - Pay Certificate
1-4A	6/85	MINNEAPOLIS	MN	BALLARD SUPPLY CO.	CASING PIPE	7,840.00	LW - Lein Waiver
2-1B	7/85	MINNEAPOLIS	MN	BALLARD SUPPLY CO.	CASING PIPE	19,000.00	LW - Lein Waiver
2-1A	7/85	MINNEAPOLIS	MN	BALLARD SUPPLY CO.	CASING PIPE	13,590.00	LW - Lein Waiver
3-1A	9/85	MINNEAPOLIS	MN	BALLARD SUPPLY CO.	CASING PIPE	3,150.00	LW - Lein Waiver
3-1B	6/86	MINNEAPOLIS	MN	BALLARD SUPPLY CO.	CASING PIPE	19,007.00	LW - Lein Waiver
2-1A	4/85	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	3,947,465.19	PC - Pay Certificate
1-3	1/86	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	3,812,029.50	PC - Pay Certificate
2-1B	9/86	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	3,308,484.32	PC - Pay Certificate
3PRS	9/86	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	277,425.00	PC - Pay Certificate
3-1A	10/86	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	1,640,685.50	PC - Pay Certificate
3-1B	11/86	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	2,792,684.14	PC - Pay Certificate
1-4A	1/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	2,176,166.00CR	AD - Addition
1-4A	1/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	TOTAL CONTRACT PRICE	3,040,953.23	PC - Pay Certificate
3-1B	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	1,962,838.89CR	AD - Addition
2-1B	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	2,305,217.00CR	AD - Addition
3-1A	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	1,174,054.25CR	AD - Addition
2-1A	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	2,741,898.00CR	AD - Addition
3PRS	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	198,774.12CR	AD - Addition
1-3	3/87	MINNEAPOLIS	MN	BARBAROSSA & SONS	PAID TO SUBCONTRACTORS/VENDORS	2,232,388.00CR	AD - Addition
1-3	1/84	MINNEAPOLIS	MN	COBB STRECKER	BONDS & INSURANCE	20,000.00	PC - Pay Certificate
1-3	5/85	MINNEAPOLIS	MN	COMPUTER POWER INC.	COMPUTER POWER SYSTEM	9,600.00	PC - Pay Certificate
1-3	5/85	MINNEAPOLIS	MN	CURTIN MATHESON SCIENTIFIC	CHEMICAL EQUIPMENT	2,700.00	PC - Pay Certificate
1-3	1/84	MINNEAPOLIS	MN	DAVIES WATER EQUIPMENT	MISC. PIPING	50,560.00	LW - Lein Waiver
1-3	10/84	MINNEAPOLIS	MN	DAVIES WATER EQUIPMENT	VALVES	5,700.00	PC - Pay Certificate
2-1B	8/85	MINNEAPOLIS	MN	DAVIES WATER EQUIPMENT	CADWELDS & MISC.	23,243.00	LW - Lein Waiver
3-1A	8/85	MINNEAPOLIS	MN	DAVIES WATER EQUIPMENT	PIPE PRODUCTS	15,030.00	LW - Lein Waiver
2-1A	8/85	MINNEAPOLIS	MN	DAVIES WATER EQUIPMENT	CADWELDS & MISC.	43,082.00	LW - Lein Waiver
1-3	1/84	MINNEAPOLIS	MN	ENGINEERING AMERICA	SUBCONTRACTOR	36,500.00	LW - Lein Waiver
2-3	7/86	MINNEAPOLIS	MN	ENGINEERING AMERICA	TOTAL CONTRACT PRICE	426,948.00	PC - Pay Certificate
1-6B	11/86	MINNEAPOLIS	MN	ENGINEERING AMERICA	TOTAL CONTRACT PRICE	347,318.00	PC - Pay Certificate
3-3A	1/87	MINNEAPOLIS	MN	ENGINEERING AMERICA	TOTAL CONTRACT PRICE	177,073.00	PC - Pay Certificate
3-3A	3/87	MINNEAPOLIS	MN	ENGINEERING AMERICA	PAID TO SUBCONTRACTORS/VENDORS	140,950.40CR	AD - Addition
2-3	3/87	MINNEAPOLIS	MN	ENGINEERING AMERICA	PAID TO SUBCONTRACTORS/VENDORS	259,112.11CR	AD - Addition

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-6B	3/87	MINNEAPOLIS	MN	ENGINEERING AMERICA	PAID TO SUBCONTRACTORS/VENDORS	205,225.04CR	AD - Addition
1-3A	10/87	MINNEAPOLIS	MN	ENGINEERING AMERICA INC.	AQUASTORE TANK SYSTEM	37,968.33	PC - Pay Certificate
1-3	4/85	MINNEAPOLIS	MN	FEED-RITE CHEMICAL	CHEMICAL PUMPS	61,800.00	PC - Pay Certificate
1-3	6/85	MINNEAPOLIS	MN	FEED-RITE CHEMICAL	CHEMICAL EQUIPMENT	35,400.00	PC - Pay Certificate
1-3	6/84	MINNEAPOLIS	MN	GOODIN COMPANY	PIPE FITTINGS	6,550.00	PC - Pay Certificate
3PRS	9/86	MINNEAPOLIS	MN	GOODIN COMPANY	DEHUMIDIFERS & SUMPS	7,814.15	LW - Lein Waiver
1-3	4/85	MINNEAPOLIS	MN	JOHNSON CONTROLS	TEMPERATURE CONTROLS	16,740.00	PC - Pay Certificate
1-1B	12/84	MINNEAPOLIS	MN	LAKELAND ENGINEERING	ELECTRICAL EQUIPMENT	383.30	PC - Pay Certificate
1-1B	12/84	MINNEAPOLIS	MN	LAKELAND ENGINEERING	COMPUTER MAINFRAME	3,162.19	PC - Pay Certificate
1-1B	5/85	MINNEAPOLIS	MN	PLAINSCO	ELECTRICAL EQUIPMENT	8,088.47	PC - Pay Certificate
1-1B	5/85	MINNEAPOLIS	MN	PLAINSCO	ELECTRICAL EQUIPMENT	16,218.80	PC - Pay Certificate
1-3	6/85	MINNEAPOLIS	MN	PLAINSCO	MISC. PIPING	5,900.00	PC - Pay Certificate
1-1B	6/85	MINNEAPOLIS	MN	PLAINSCO	ELECTRICAL EQUIPMENT	2,344.89	PC - Pay Certificate
4-1E	11/87	MINNEAPOLIS	MN	PLAINSCO	STEEL PIPE	997.08	LW - Lein Waiver
1-1B	1/85	MINNEAPOLIS	MN	POWERTRONICS, INC.	ALARM CABINET	339.02	PC - Pay Certificate
1-3	1/84	MINNEAPOLIS	MN	SKARNES, INC.	HOISTS & TROLLEYS	12,040.00	LW - Lein Waiver
1-3	1/84	MINNEAPOLIS	MN	ST. PAUL FIRE & MARINE	BONDS & INSURANCE	20,000.00	PC - Pay Certificate
1-3	7/85	MINNEAPOLIS	MN	WALDOR PUMP	FILTER SAND	7,000.00	PC - Pay Certificate
1-3	8/85	MINNEAPOLIS	MN	WALDOR PUMP	COAL MEDIA	4,360.00	PC - Pay Certificate
3PRS	4/86	MINNEAPOLIS	MN	WESTBURNE SUPPLY	MISC. PIPING	378.00	PC - Pay Certificate
3PRS	4/86	MINNEAPOLIS	MN	WESTBURNE SUPPLY	MISC. PIPING	1,584.00	PC - Pay Certificate
1-3	8/85	MINNEAPOLIS	MN	WALDOR PUMP	TUBE SETTLERS	37,000.00	PC - Pay Certificate
3PRS	4/86	ST. PAUL	MN	BROCK WHITE CO.	CONCRETE FORMS	4,450.00	PC - Pay Certificate
1-4A	3/85	ST. PAUL	MN	JAY BROS.	LADDERS	3,500.00	LW - Lein Waiver
3-1A	10/85	ST. PAUL	MN	JAY BROS.	LADDERS	3,150.00	LW - Lein Waiver
2-1B	10/85	ST. PAUL	MN	JAY BROS.	LADDERS	7,875.00	LW - Lein Waiver
3-1B	4/86	ST. PAUL	MN	JAY BROS.	LADDERS	7,560.00	LW - Lein Waiver
2-1A	7/86	ST. PAUL	MN	JAY BROS.	LADDERS	7,560.00	LW - Lein Waiver
1-3	1/84	ST. PAUL	MN	NORTHWESTERN POWER EQUIPMENT	BACKFLOW PREVENTORS	2,705.00	LW - Lein Waiver
1-3	1/85	ST. PAUL	MN	NORTHWESTERN POWER EQUIPMENT	CHECK VALVE	2,108.00	PC - Pay Certificate
1-3A	1/88	ST. PAUL	MN	R.E. MOONEY & ASSOCIATES INC.	PAINT SUPPLIES	2,572.39	PC - Pay Certificate
3PRS	5/86	ST. PAUL	MN	SCHLETTY-MCCANN INC.	PAINTING SUBCONTRACTOR	4,047.00	LW - Lein Waiver
1-3	2/87	ST. PAUL	MN	SCHLETTY-MCCANN INC.	PAINTING SUBCONTRACTOR	45,246.00	LW - Lein Waiver
3PRS	5/86	ST. PAUL	MN	WHEELER TANK MFG.	AIR DUCTS	6,285.00	PC - Pay Certificate
3-2A	1/87	TWIN LAKES	MN	MILLER EQUIPMENT	SUBCONTRACTOR	10,011.00	LW - Lein Waiver
		100 Transactions			Total Amount for MN	7,785,741.33	

Money Spent in MO From 1/83 to 3/88

MISSOURI

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
4-2F	7/87	INDEPENDENCE	MO	WATER PRODUCTS CO-MID AMERICA	VALVES AND FITTINGS	12,126.37	PC - Pay Certificate
4-2F	7/87	INDEPENDENCE	MO	WATER PRODUCTS CO-MID AMERICA	MISC. FITTINGS	15,622.29	PC - Pay Certificate
3-2B	4/86	KANSAS CITY	MO	CLAY & BAILEY MFG. COMPANY	RINGS & LIDS	6,031.60	PC - Pay Certificate
1-3	3/85	KANSAS CITY	MO	TNEMEC CO.	PAINT	2,100.00	PC - Pay Certificate
1-7	4/85	MARYLAND HTS.	MO	BRASCH MANUFACTURING CO.	HEATERS	900.00	SB - Submittal
3-2A	12/86	ST. CHARLES	MO	TRINITY METAL PRODUCTS	CASING PIPE	5,325.81	LW - Lein Waiver
1-3	9/84	ST. JOSEPH	MO	VARCO-PRUDEN BLDGS.	BUILDING STRUCTURE	60,700.00	PC - Pay Certificate
1-3	7/85	ST. JOSEPH	MO	VARCO-PRUDEN BLDGS.	BUILDING STRUCTURE	720.00	PC - Pay Certificate
1-3	2/85	ST. LOUIS	MO	KILLARK	ELECTRICAL EQUIPMENT	2,440.00	PC - Pay Certificate
1-1B	4/85	ST. LOUIS	MO	LABARGE PIPE & STEEL CO.	FLANGES	600.00	PC - Pay Certificate
1-1B	1/85	ST. LOUIS	MO	LABARGE TUBULAR PRODUCTS	FABRICATED STEEL PIPE	7,500.00	PC - Pay Certificate
		11 Transactions			Total Amount for MO	114,066.07	

Money Spent in ND From 1/83 to 3/88

NORTH DAKOTA

1-1B	3/84	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL SUBCONTRACTOR	100,566.31	LW - Lein Waiver
1-3	8/84	BISMARCK	ND	BECKER ELECTRIC	ELECTRIC SUPPLIES	12,360.00	PC - Pay Certificate
1-4A	11/84	BISMARCK	ND	BECKER ELECTRIC	CATHODIC SUBCONTRACTOR	10,400.00	PC - Pay Certificate
3-1A	7/85	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL WORK	8,135.00	PC - Pay Certificate
2-3	11/85	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL WORK	1,977.00	LW - Lein Waiver
1-6B	11/85	BISMARCK	ND	BECKER ELECTRIC	SUBCONTRACTOR	1,483.00	LW - Lein Waiver
3PRS	4/86	BISMARCK	ND	BECKER ELECTRIC	SUBCONTRACTOR	16,200.00	PC - Pay Certificate
2-1A	7/86	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL SUBCONTRACTOR	9,435.00	PC - Pay Certificate
2-1B	9/86	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL WORK	9,015.00	LW - Lein Waiver
3-3A	10/86	BISMARCK	ND	BECKER ELECTRIC	ELECTRICAL WORK	683.00	LW - Lein Waiver
1-7	10/86	BISMARCK	ND	BECKER ELECTRIC	SUBCONTRACTOR	8,200.00	LW - Lein Waiver
4-1E	11/87	BISMARCK	ND	BECKER ELECTRIC INC.	ELECTRICAL WORK	15,680.00	LW - Lein Waiver
1-3	7/84	BISMARCK	ND	BORDER STATES	ELECTRIC SUPPLYS	15,800.00	PC - Pay Certificate

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-3	3/85	BISMARCK	ND	KING COAL FURNACE CORP.	ASH PIT	2,100.00	PC - Pay Certificate
1-3	6/85	BISMARCK	ND	KING COAL FURNACE CORP.	FURNACE EQUIPMENT	17,200.00	PC - Pay Certificate
ENGR	3/88	BISMARCK/TOPEKA	ND	BARTLETT & WEST / BOYLE ENG	ENGINEERING SERVICES	4,252,378.95	CH
4-1E	11/87	DICKINSON	ND	PUMP SYSTEMS INC.	SUMP PUMP AND PARTS	665.10	LW - Lein Waiver
1-3	1/85	FARGO	ND	DAVIES WATER EQUIPMENT	STORAGE TANK	2,530.00	PC - Pay Certificate
1-2	8/84	FARGO	ND	FARGO WATER	MISC. PIPING	6,979.13	PC - Pay Certificate
1-4A	4/85	FARGO	ND	FARGO WATER	MISC. PIPING	40,780.00	LW - Lein Waiver
2-1A	10/85	FARGO	ND	FARGO WATER	MISC. PIPING	104,617.00	LW - Lein Waiver
3-1A	10/86	FARGO	ND	FARGO WATER	MISC. PIPING	37,754.00	LW - Lein Waiver
2-1B	10/86	FARGO	ND	FARGO WATER	MISC. PIPING	108,657.00	LW - Lein Waiver
4-1A	9/87	FARGO	ND	FARGO WATER	MISC. PIPING	57,247.84	PC - Pay Certificate
4-1B	9/87	FARGO	ND	FARGO WATER	PIPE AND PIPE FITTINGS	67,322.84	PC - Pay Certificate
1-3	6/85	FARGO	ND	FARGO-MOORHEAD INSULATION	VINYL FABRIC	20,950.00	PC - Pay Certificate
1-3	9/85	FARGO	ND	FARGO-MOORHEAD INSULATION	INSULATION	5,070.00	PC - Pay Certificate
1-1B	5/84	FARGO	ND	MID-AMERICA STEEL	REINFORCING STEEL	3,384.00	LW - Lein Waiver
1-3	6/84	FARGO	ND	MID-AMERICA STEEL	MISC. METALS	13,100.00	PC - Pay Certificate
1-7	4/85	FARGO	ND	MID-AMERICA STEEL	REBAR	226,000.00	PC - Pay Certificate
1-7	4/85	FARGO	ND	MID-AMERICA STEEL	MISC. METALS	2,700.00	PC - Pay Certificate
1-5A	1/87	FARGO	ND	NORTHERN IMPROVEMENT COMPANY	TOTAL CONTRACT PRICE	3,990,533.00	PC - Pay Certificate
1-5A	3/87	FARGO	ND	NORTHERN IMPROVEMENT COMPANY	PAID TO SUBCONTRACTORS/VENDORS	2,083,921.26CR	AD - Addition
3-2B	5/86	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	1,244.88	PC - Pay Certificate
1-5B	5/86	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	1,172,128.93	LW - Lein Waiver
1-5A	7/86	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	1,759,400.00	LW - Lein Waiver
4-2F	6/87	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	29,759.01	PC - Pay Certificate
4-2E	8/87	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	162,888.13	PC - Pay Certificate
4-2C	9/87	FARGO	ND	NORTHERN PIPE PRODUCTS	PIPE	319,772.92	PC - Pay Certificate
3PRS	4/86	FARGO	ND	NORTHERN WATER WORKS	VALVES, PIPE & ACCESSORIES	62,099.96	LW - Lein Waiver
1-5B	5/86	FARGO	ND	NORTHERN WATER WORKS	VALVES & FITTINGS	40,375.39	LW - Lein Waiver
1-5A	7/86	FARGO	ND	NORTHERN WATER WORKS	VALVES	109,500.00	LW - Lein Waiver
3-2A	12/86	FARGO	ND	NORTHERN WATER WORKS	PIPE & FITTINGS	784,360.99	LW - Lein Waiver
4-2F	5/87	FARGO	ND	NORTHERN WATER WORKS SUPPLY	PIPE FITTINGS	6,431.33	PC - Pay Certificate
4-2F	6/87	FARGO	ND	NORTHERN WATER WORKS SUPPLY	VALVES	42,339.89	PC - Pay Certificate
4-2F	7/87	FARGO	ND	NORTHERN WATER WORKS SUPPLY	METERS	97,912.80	PC - Pay Certificate
1-2	11/84	FARGO	ND	SORNSIN CONSTRUCTION CO.	TOTAL CONTRACT PRICE	614,992.20	PC - Pay Certificate

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-2	11/84	FARGO	ND	SORNSIN CONSTRUCTION CO.	PAID TO SUBCONTRACTORS/VENDORS	441,580.54CR	AD - Addition
1-5A	7/85	FARGO	ND	TRAFFIC SAFETY SERVICE INC.	SIGNS	5,148.00	LW - Lein Waiver
1-7	9/86	FARGO	ND	WANZEK CONSTRUCTION	TOTAL CONTRACT PRICE	1,074,105.00	PC - Pay Certificate
1-7	3/87	FARGO	ND	WANZEK CONSTRUCTION	PAID TO SUBCONTRACTORS/VENDORS	603,896.00CR	AD - Addition
1-5A	11/86	LINTON	ND	K & H ELECTRIC	SUBCONTRACTOR	33,705.27	LW - Lein Waiver
1-3	11/86	MANDAN	ND	DAKOTA INC.	DOORS	15,897.00	LW - Lein Waiver
				53 Transactions	Total Amount for ND	12,372,567.07	
						NEBRASKA	
				Money Spent in NE	From 1/83 to 3/88		
4-1E	11/87	EXETER	NE	HORIZONTAL BORING & TUNNELING	PIPE BORING	17,400.00	LW - Lein Waiver
2-1B	9/86	LINCOLN	NE	W. V. MARKIN & CO.	CONTINUITY TESTING	1,662.00	LW - Lein Waiver
3-1A	11/86	LINCOLN	NE	W. V. MARKIN & CO.	CONTINUITY TESTING	1,662.00	LW - Lein Waiver
				3 Transactions	Total Amount for NE	20,724.00	
						NEW JERSEY	
				Money Spent in NJ	From 1/83 to 3/88		
1-1B	2/85	NEWARK	NJ	AMETAK CONTROLS DIVISION	ELECTRICAL CONTROLS	799.52	PC - Pay Certificate
1-3	5/85	NEWARK	NJ	METTLER	COMPUTER EQUIPMENT	5,255.00	PC - Pay Certificate
				2 Transactions	Total Amount for NJ	6,054.52	
						NEW YORK	
				Money Spent in NY	From 1/83 to 3/88		
1-3	5/85	BRONX	NY	FEDERAL/A. L. EASTMAN	BOILER	8,900.00	PC - Pay Certificate
				1 Transactions	Total Amount for NY	8,900.00	

OHIO

Money Spent in OH From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-7	9/86	AKRON	OH	B. F. GOODRICH	HYPALON LINER	43,800.00	PC - Pay Certificate
1-1B	12/84	CINCINNATI	OH	COOKWELL SCREEN CORPORATION	INTAKE ASSEMBLY	10,305.12	PC - Pay Certificate
1-4A	11/84	CLEVELAND	OH	ENCO PRODUCTS	CADWELD	19,100.00	SB - Submittal
2-1A	4/85	CLEVELAND	OH	ENCO PRODUCTS	CADWELDS	20,189.00	SB - Submittal
2-1B	9/86	CLEVELAND	OH	ENCO PRODUCTS	CADWELDS	20,860.00	SB - Submittal
3-1B	10/86	CLEVELAND	OH	ENCO PRODUCTS	CADWELD SUPPLIES	22,300.00	LW - Lein Waiver
1-3	11/84	CLEVELAND	OH	INTERGY, INC.	PLUMBING SUPPLIES	17,000.00	PC - Pay Certificate
1-1B	5/85	COLUMBUS	OH	MID-STATE NUT & BOLT CO.	NUTS & BOLTS	2,238.11	PC - Pay Certificate
1-1B	6/85	COLUMBUS	OH	THE MUTUAL MFG. & SUPPLY CO.	FLANGE	420.35	PC - Pay Certificate
1-1B	6/86	WESTERVILLE	OH	THE RANNEY CORPORATION	TOTAL CONTRACT PRICE	1,772,964.00	PC - Pay Certificate
1-1B	6/86	WESTERVILLE	OH	THE RANNEY CORPORATION	PAID TO SUBCONTRACTORS/VENDORS	660,819.66CR	AD - Addition
		11 Transactions			Total Amount for OH	1,268,356.92	

OKLAHOMA

Money Spent in OK From 1/83 to 3/88

1-3	6/85	TULSA	OK	BADGER	INSERT FLOW TUBES	9,980.00	PC - Pay Certificate
1-1B	7/85	TULSA	OK	MESA PRODUCTS, INC.	TEST STATION & CADWELD	265.55	PC - Pay Certificate
		2 Transactions			Total Amount for OK	10,245.55	

PENNSYLVANIA

Money Spent in PA From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
3-1B	11/86	BERWICK	PA	MULTIPLEX MFG.	AIR VALVES	12,100.00	LW - Lein Waiver
1-3	4/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	5,150.00	PC - Pay Certificate
1-3	4/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	58,000.00	PC - Pay Certificate
1-3	5/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	8,060.00	PC - Pay Certificate
1-3	6/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	8,500.00	PC - Pay Certificate
1-3	6/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	19,100.00	PC - Pay Certificate
1-3	6/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	7,800.00	PC - Pay Certificate
1-3	6/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	8,800.00	PC - Pay Certificate
1-3	10/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	721.00	PC - Pay Certificate
1-3	10/84	BETHLEHEM	PA	BETHLEHEM STEEL	REBAR	4,460.00	PC - Pay Certificate
1-3	1/85	BRADFORD	PA	DRESSER CO.	VALVES	33,726.00	PC - Pay Certificate
1-3	6/85	BRADFORD	PA	DRESSER CO.	VALVES	4,750.00	PC - Pay Certificate
1-1B	12/84	EASTON	PA	ACOPIAN CORPORATION	POWER SUPPLY	132.97	PC - Pay Certificate
1-3	6/85	HARSHAW	PA	DREXELBROOK UNIVERSAL	TRANSMITTERS & PROBE RODS	9,970.00	PC - Pay Certificate
1-3	4/85	NORTH WALES	PA	LEEDS & NORTHRUP	COMPUTER EQUIPMENT	2,300.00	PC - Pay Certificate
1-3	9/85	PITTSBURG	PA	ALLIED/FISCHER SCIENTIFIC	CHEMICAL EQUIPMENT	860.00	PC - Pay Certificate
1-3	10/85	PITTSBURG	PA	ALMA ACTUALTORS	VALVES	33,450.00	PC - Pay Certificate
4-3A	9/87	PITTSBURG	PA	HYDROSTORAGE	FOUNDATIONS	32,571.00	PC - Pay Certificate
4-3A	1/88	PITTSBURG	PA	HYDROSTORAGE	FABRICATED MATERIALS/ERECTION	156,511.80	PC - Pay Certificate
1-3	1/84	ZELIENOPLE	PA	F. B. LEOPOLD CO.	AGITATORS, DRAINS, TROUGHS	30,325.00	LW - Lein Waiver
1-3	10/84	ZELIENOPLE	PA	F. B. LEOPOLD CO.	AGITATORS, TROUGHS	13,100.00	PC - Pay Certificate
1-3	10/84	ZELIENOPLE	PA	F. B. LEOPOLD CO.	FILTER BLOCK	12,100.00	PC - Pay Certificate
1-3	7/84	ZELIENOPLE	PA	MUELLER CO.	HYDRANTS	1,500.00	PC - Pay Certificate
		23 Transactions			Total Amount for PA	463,987.77	

Money Spent in SD From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
4-1E	11/87	ABERDEEN	SD	CUSTOM SHEET METAL INC.	DEHUMIDIFIER FAN & DUCTWORK	2,743.50	LW - Lein Waiver
4-1E	3/88	ABERDEEN	SD	DAHME CONSTRUCTION COMPANY	PAID TO SUBCONTRACTORS/VENDORS	1,323,693.75CR	AD - Addition
4-1E	4/87	ABERDEEN	SD	DAHME CONSTRUCTION COMPANY INC	TOTAL CONTRACT PRICE	1,825,611.73	PC - Pay Certificate
1-3	2/86	ABERDEEN	SD	FRANK SCEPANIAK FLOORING	TILING SUBCONTRACTOR	4,330.00	PC - Pay Certificate
4-1E	11/87	ABERDEEN	SD	GAGE BROTHERS CONCRETE	CONCRETE	1,534.83	LW - Lein Waiver
4-1B	9/87	ABERDEEN	SD	H. F. JACOB AND SONS	STOCKPILED SAND	60,263.42	PC - Pay Certificate
1-1A	11/83	ABERDEEN	SD	H. F. JACOBS & SONS CONST.	TOTAL CONTRACT PRICE	53,897.00	PC - Pay Certificate
1-1A	11/83	ABERDEEN	SD	H. F. JACOBS & SONS CONST.	PAID TO SUBCONTRACTORS/VENDORS	6,370.00CR	AD - Addition
1-3	12/85	ABERDEEN	SD	H. F. JACOBS & SONS CONST.	EARTHWORK SUBCONTRACTOR	56,107.00	LW - Lein Waiver
4-1A	10/87	ABERDEEN	SD	H. F. JACOBS AND SONS	SAND (GRAVEL SURFACING)	28,835.29	PC - Pay Certificate
4-1B	1/88	ABERDEEN	SD	H. F. JACOBS AND SONS	SAND	8,391.55	PC - Pay Certificate
4-1A	7/87	ABERDEEN	SD	H.F. JACOBS & SONS	STOCKPILED SAND	75,296.00	PC - Pay Certificate
1-1A	11/83	ABERDEEN	SD	HARMS OIL CO.	FUEL & OIL	6,370.00	LW - Lein Waiver
4-1E	11/87	ABERDEEN	SD	HELMS AND ASSOCIATES	PROJECT STAKING	3,570.00	LW - Lein Waiver
1-3	1/84	ABERDEEN	SD	KYBURZ-CARLSON	DRYWALL SUBCONTRACTOR	27,919.00	LW - Lein Waiver
1-3A	7/87	ABERDEEN	SD	KYBURZ-CARLSON CONSTRUCTION CO	TOTAL CONTRACT PRICE	3,934,436.00	PC - Pay Certificate
4-1E	11/87	ABERDEEN	SD	KYBURZ-CARLSON CONSTRUCTION CO	CONSTRUCT CONTROL VAULT	18,261.75	LW - Lein Waiver
1-3A	3/88	ABERDEEN	SD	KYBURZ-CARLSON CONSTRUCTION CO	PAID TO SUBCONTRACTORS/VENDORS	183,008.73CR	AD - Addition
4-1E	11/87	ABERDEEN	SD	LIEN TRANSPORTATION COMPANY	GRAVEL & ROCK (BEDDING MAT.)	76,799.05	LW - Lein Waiver
1-3	1/84	ABERDEEN	SD	STEEL STRUCTURES	METAL BUILDING SUBCONTRACTOR	135,900.00	LW - Lein Waiver
1-1B	3/84	ABERDEEN	SD	STEEL STRUCTURES	METAL BLDG. SUBCONTRACTOR	26,884.00	LW - Lein Waiver
2-2A	9/86	BOWDLE/TOLSTOY	SD	BOWDLE & TOLSTOY CENEX	FUEL & OIL	109,192.52	LW - Lein Waiver
1-7	10/86	BROOKINGS	SD	SEXAUER CO.	SEED	1,700.00	LW - Lein Waiver
4-1E	11/87	EUREKA	SD	STANLEY HIEB EXCAVATING	EQUIPMENT & LABOR	20,000.00	LW - Lein Waiver
2-2B	1/87	FAULKTON	SD	VOGELS AUTO SERVICE	FUEL & OIL	50,074.00	LW - Lein Waiver
1-5A	7/86	GROTON	SD	BILL OWEN TRENCHING	SUBCONTRACTOR	1,616.85	LW - Lein Waiver
1-5B	8/86	HERREID	SD	HERREID CONCRETE	METER PITS	16,271.41	LW - Lein Waiver
1-5A	11/86	HERREID	SD	HERREID CONCRETE	METER PITS	15,620.00	LW - Lein Waiver
3-2A	12/86	HERREID	SD	HERREID CONCRETE	METER PITS	7,836.40	LW - Lein Waiver
4-2E	7/87	HERREID	SD	HERREID CONCRETE PLANT	VALVE PITS	5,980.00	PC - Pay Certificate
4-2C	10/87	HERREID	SD	HERREID CONCRETE PLANT	VALVE PITS	3,588.00	PC - Pay Certificate

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-5B	8/86	HOVEN	SD	CHUCKS ELECTRIC	SUBCONTRACTOR	4,124.82	LW - Lein Waiver
3-1B	11/86	IPSWICH	SD	OBAN CONSTRUCTION	SAND & GRAVEL	95,206.00	LW - Lein Waiver
3-1A	11/86	IPSWICH	SD	OBAN CONSTRUCTION	SAND & GRAVEL	67,033.00	LW - Lein Waiver
3-1B	6/87	IPSWICH	SD	OBAN CONSTRUCTION	DRIVEWAY REPLACEMENT	23,701.89	LW - Lein Waiver
3PRS	9/86	IPSWICH	SD	OBAN READY-MIX	CONCRETE	22,401.00	LW - Lein Waiver
2-1B	10/86	IPSWICH	SD	OBAN READY-MIX	CONCRETE	2,871.00	LW - Lein Waiver
3-1A	10/86	IPSWICH	SD	OBAN READY-MIX	CONCRETE	2,360.00	LW - Lein Waiver
3-1B	11/86	IPSWICH	SD	OBAN READY-MIX	CONCRETE	2,962.00	LW - Lein Waiver
1-5A	4/85	MITCHELL	SD	DAKOTA PUMP INC.	PACKAGED VAULTS	86,810.00	LW - Lein Waiver
1-5B	6/86	MITCHELL	SD	DAKOTA PUMP INC.	PACKAGED VAULTS	122,440.00	LW - Lein Waiver
3-2B	9/86	MITCHELL	SD	DAKOTA PUMP INC.	PACKAGED BOOSTER VAULT	55,851.12	PC - Pay Certificate
2-2A	9/86	MITCHELL	SD	DAKOTA PUMP INC.	PACKAGED VAULTS	90,062.00	LW - Lein Waiver
2-2B	9/86	MITCHELL	SD	DAKOTA PUMP INC.	PACKAGED VAULTS	97,058.00	LW - Lein Waiver
1-3A	11/87	MITCHELL	SD	SHEESLEY PLUMBING AND HEATING	PIPE	5,586.00	PC - Pay Certificate
1-3	11/84	MITCHELL	SD	TESSIER SHEET METAL	SUBCONTRACTOR	55,382.00	LW - Lein Waiver
1-3	9/85	MITCHELL	SD	TESSIER SHEET METAL	SUBCONTRACTOR	2,100.00	PC - Pay Certificate
1-1B	5/86	MOBRIDGE	SD	JENSEN ROCK & SAND	CONCRETE & MATERIALS	128,518.00	LW - Lein Waiver
2-1A	7/86	MOBRIDGE	SD	JENSEN ROCK & SAND	SAND & GRAVEL	102,096.00	LW - Lein Waiver
1-3	7/86	MOBRIDGE	SD	JENSEN ROCK & SAND	CONCRETE	227,250.00	LW - Lein Waiver
3-1A	8/86	MOBRIDGE	SD	JENSEN ROCK & SAND	ROCK & GRAVEL	4,979.00	LW - Lein Waiver
2-1B	9/86	MOBRIDGE	SD	JENSEN ROCK & SAND	SAND & GRAVEL	74,907.00	LW - Lein Waiver
1-7	10/86	MOBRIDGE	SD	JENSEN ROCK & SAND	CONCRETE & GRAVEL	53,576.00	LW - Lein Waiver
1-3	1/84	PIERRE	SD	S. D. CONCRETE PRODUCTS	CONCRETE PIPE	17,270.00	LW - Lein Waiver
1-2	6/84	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES	4,387.39	PC - Pay Certificate
1-4	10/84	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES	4,300.00	SB - Submittal
2-1B	12/85	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES & PIPE WEIGHTS	68,250.00	LW - Lein Waiver
2-1A	7/86	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES & PIPE WEIGHTS	25,878.00	LW - Lein Waiver
3-1A	8/86	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES & PIPE WEIGHTS	10,810.00	LW - Lein Waiver
1-7	10/86	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES & RCP	6,100.00	LW - Lein Waiver
3-1B	12/86	PIERRE	SD	S. D. CONCRETE PRODUCTS	MANHOLES & PIPE WEIGHTS	101,875.00	LW - Lein Waiver
4-1B	10/87	PIERRE	SD	S.D. CONCRETE PRODUCTS CO.	MANHOLES AND PIPE WEIGHTS	101,320.96	PC - Pay Certificate
4-2E	9/87	PIERRE	SD	SD CONCRETE PRODUCTS COMPANY	MANHOLES	12,261.58	PC - Pay Certificate
4-1A	9/87	PIERRE	SD	SD CONCRETE PRODUCTS COMPANY	MANHOLES AND PIPE WEIGHTS	63,468.71	PC - Pay Certificate
4-1E	11/87	PIERRE	SD	SD CONCRETE PRODUCTS COMPANY	MANHOLES	56,892.98	LW - Lein Waiver

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
3-1A	12/86	REVILLO	SD	HAWKEYE ENTERPRISES	SEEDING	6,278.25	LW - Lein Waiver
3-1B	6/87	REVILLO	SD	HAWKEYE ENTERPRISES	SEEDING	1,700.00	LW - Lein Waiver
2-2A	11/86	ROSCOE	SD	ROSCOE TRUSTWORTHY HARDWARE	ELECTRICAL WORK	3,405.19	LW - Lein Waiver
2-2B	11/86	ROSCOE	SD	ROSCOE TRUSTWORTHY HARDWARE	ELECTRICAL WORK	7,974.02	LW - Lein Waiver
2-2B	9/86	ROSCOE	SD	SCHURR'S MANUFACTURING	REPAIRS	10,400.00	CH
2-2A	9/86	ROSCOE	SD	SCHURR'S MANUFACTURING	REPAIRS	10,300.00	CH
2-2A	9/86	ROSCOE	SD	SPITZER IMPLEMENT	REPAIRS	3,200.00	CH
2-2B	9/86	ROSCOE	SD	SPITZER IMPLEMENT	REPAIRS	9,900.00	CH
1-1B	6/86	SELBY	SD	SCHILLING EXCAVATION	SUBCONTRACTOR	200.00	LW - Lein Waiver
2-1A	4/85	SELBY	SD	WAYNE D. PERMAN	SURVEYING SUBCONTRACTOR	6,640.00	LW - Lein Waiver
3-1A	7/86	SELBY	SD	WAYNE D. PERMAN	SURVEYING	4,960.00	LW - Lein Waiver
2-1B	9/86	SELBY	SD	WAYNE D. PERMAN	SURVEYING	6,413.00	LW - Lein Waiver
2-2A	11/86	SELBY	SD	WAYNE D. PERMAN	SURVEYING	665.60	PC - Pay Certificate
3-1B	11/86	SELBY	SD	WAYNE D. PERMAN	SURVEYING	7,477.00	LW - Lein Waiver
1-5B	12/85	SIOUX FALLS	SD	BOLLWEG, INC.	SUBCONTRACTOR	52,494.79	LW - Lein Waiver
1-6B	7/86	SIOUX FALLS	SD	D. W. PROEHL CONSTRUCTION	CONCRETE SUBCONTRACTOR	87,870.00	LW - Lein Waiver
2-3	7/86	SIOUX FALLS	SD	D. W. PROEHL CONSTRUCTION	CONCRETE SUBCONTRACTOR	97,285.00	LW - Lein Waiver
3-3A	12/87	SIOUX FALLS	SD	DW PROEHL	FOUNDATION & SITEWORK	38,390.00	LW - Lein Waiver
3-3B	4/87	SIOUX FALLS	SD	DW PROEHL CONSTRUCTION INC	FOUNDATIONS & MISC. PIPING	82,749.99	LW - Lein Waiver
3PRS	4/86	SIOUX FALLS	SD	EGGER STEEL	ROOF SCUTTLES	11,680.36	LW - Lein Waiver
1-3	6/84	SIOUX FALLS	SD	EGGER STEEL COMPANY	STEEL	2,100.00	PC - Pay Certificate
1-5B	8/85	SIOUX FALLS	SD	EGGER STEEL COMPANY	REBAR	364.00	LW - Lein Waiver
1-3A	10/87	SIOUX FALLS	SD	EGGER STEEL COMPANY	REINFORCEMENT (BAR SUPPORTS)	59,671.50	PC - Pay Certificate
1-3A	10/87	SIOUX FALLS	SD	EGGER STEEL COMPANY	MISC. BOLTS & STEEL	3,579.45	PC - Pay Certificate
1-3A	2/88	SIOUX FALLS	SD	ELECTRIC SUPPLY COMPANY	ELECTRICAL CONDUITS & SUPPLIES	2,054.40	PC - Pay Certificate
1-1B	6/85	SIOUX FALLS	SD	GAGE BROS. CONCRETE	PRECAST CONCRETE	10,670.40	LW - Lein Waiver
1-3A	2/88	SIOUX FALLS	SD	GRAYBAR	ELECTRICAL BOXES & SUPPLIES	16,225.52	PC - Pay Certificate
1-3A	1/88	SIOUX FALLS	SD	J.H. LARSON ELECTRICAL COMPANY	ELECTRICAL BOXES	903.31	PC - Pay Certificate
1-1B	5/85	SIOUX FALLS	SD	O'CONNER COMPANY	ELECTRICAL EQUIPMENT	4,869.00	PC - Pay Certificate
1-3A	12/87	SIOUX FALLS	SD	R & L SUPPLY LTD	SHOCK ABSORBER	2,324.36	PC - Pay Certificate
1-1B	5/84	SIOUX FALLS	SD	SHEESLEY PLUMBING & HEATING	SUBCONTRACTOR	130,146.00	LW - Lein Waiver
1-4	12/84	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT	PIPE	7,605.00	PC - Pay Certificate
1-1B	8/85	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT	VALVES	10,950.00	PC - Pay Certificate
2-2A	9/86	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT	VALVES & MISC.	19,370.74	LW - Lein Waiver

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
2-2B	9/86	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT	VALVES & MISC.	28,480.73	LW - Lein Waiver
3-2A	12/86	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT	VALVES & MISC.	71,175.68	LW - Lein Waiver
1-3A	11/87	SIOUX FALLS	SD	SIOUX PIPE & EQUIPMENT COMPANY	PIPE & MISC.	8,190.86	PC - Pay Certificate
4-2E	6/87	SIOUX FALLS	SD	SIOUX PIPE AND EQUIPMENT	VALVES AND MISC.	46,696.17	PC - Pay Certificate
4-1E	11/87	SIOUX FALLS	SD	SIOUX PIPE AND EQUIPMENT	VALVES AND FITTINGS	59,007.40	LW - Lein Waiver
1-3A	9/87	SIOUX FALLS	SD	STAN HOUSTON EQUIPMENT CO. INC	BOX VOIDS	7,927.17	PC - Pay Certificate
1-3A	9/87	SIOUX FALLS	SD	STAN HOUSTON EQUIPMENT CO. INC	SITE EARTHWORK/BONDING AGENTS	9,864.56	PC - Pay Certificate
1-4A	6/85	SPEARFISH	SD	BRADLEY SEEDING	SEEDING SUBCONTRACTOR	22,365.00	LW - Lein Waiver
2-1A	5/86	SPEARFISH	SD	BRADLEY SEEDING	SEEDING SUBCONTRACTOR	34,020.00	LW - Lein Waiver
2-2B	9/86	WECOTA	SD	FARMERS UNION OIL CO.	FUEL & OIL	81,826.58	LW - Lein Waiver
				109 Transactions	Total Amount for SD	7,956,417.30	

Money Spent in TN From 1/83 to 3/88

TENNESSEE

1-1B	6/85	MEMPHIS	TN	LAYNE & BOWLER, INC.	PUMP	60,038.00	LW - Lein Waiver
1-5B	3/85	MURFREESBURO	TN	MCCULLOUGH INDUSTRIES	METER PITS	61,875.00	LW - Lein Waiver
1-5A	7/86	MURFREESBURO	TN	MCCULLOUGH INDUSTRIES	METER PITS	71,070.00	LW - Lein Waiver
2-2B	9/86	MURFREESBURO	TN	MCCULLOUGH INDUSTRIES	METER PITS	77,133.36	LW - Lein Waiver
2-2A	9/86	MURFREESBURO	TN	MCCULLOUGH INDUSTRIES	METER PITS	74,336.30	LW - Lein Waiver
3-2A	12/86	MURFREESBURO	TN	MCCULLOUGH INDUSTRIES	METER PITS	49,000.00	LW - Lein Waiver
				6 Transactions	Total Amount for TN	393,452.66	

TEXAS

Money Spent in TX From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE		AMOUNT	CODE
1-5B	6/85	DALLAS	TX	MUELLER COMPANY	VALVES & SADDLES		21,590.48	LW - Lein Waiver
3-2B	3/86	DALLAS	TX	MUELLER COMPANY	VALVES		3,759.46	PC - Pay Certificate
3-2B	5/86	DALLAS	TX	MUELLER COMPANY	VALVES		1,974.00	PC - Pay Certificate
4-2E	6/87	DALLAS	TX	MUELLER COMPANY	VALVES		47,096.40	PC - Pay Certificate
4-2E	7/87	DALLAS	TX	MUELLER COMPANY	METER PITS		168,612.11	PC - Pay Certificate
4-2C	11/87	DALLAS	TX	MUELLER COMPANY	METER PITS		16,588.80	PC - Pay Certificate
PSUP	5/86	DEER PARK	TX	B.F. GOODRICH	RESIN	SEE ATTACHMENT	879,832.14	CH
PSUP	5/86	DEER PARK	TX	FORMOSA PRODUCTS	RESIN	SEE ATTACHMENT	879,832.14	CH
PSUP	5/86	HOUSTON	TX	VISTA CHEMICAL CO.	RESIN	SEE ATTACHMENT	173,297.66	CH
1-4	10/84	TYLER	TX	TYLER PIPE	CASTINGS		300.00	SB - Subaittal
				10 Transactions	Total Amount for TX		2,192,883.19	

UTAH

Money Spent in UT From 1/83 to 3/88

1-3	8/85	SALT LAKE CITY	UT	DELTA INC.	LAUNDERS AND WIERS		4,610.00	PC - Pay Certificate
1-3	8/85	SALT LAKE CITY	UT	DELTA INC.	SENSORS & TANKS		29,560.00	PC - Pay Certificate
1-3	8/85	SALT LAKE CITY	UT	DELTA INC.	PLASTIC BAFFLES		7,680.00	PC - Pay Certificate
				3 Transactions	Total Amount for UT		41,850.00	

WISCONSIN

Money Spent in WI From 1/83 to 3/88

CONTRACT	DATE	LOCATION		SUPPLIER OR FIRM	MATERIAL OR SERVICE	AMOUNT	CODE
1-3	9/84	MAIDEN ROCK	WI	WIESER CONCRETE	MANHOLES	3,000.00	PC - Pay Certificate
1-4A	4/85	MAIDEN ROCK	WI	WIESER CONCRETE	MANHOLES	21,081.00	LW - Lein Waiver
3PRS	4/86	MILWAUKEE	WI	DESSERT AIRE CORP.	DEHUMIDIFIERS	5,054.00	PC - Pay Certificate
3-2A	1/87	MILWAUKEE	WI	MICHELS PIPELINE COMPANY	TOTAL CONTRACT PRICE	3,022,823.81	PC - Pay Certificate
3-2A	3/87	MILWAUKEE	WI	MICHELS PIPELINE COMPANY	PAID TO SUBCONTRACTORS/VENDORS	1,409,407.64CR	AD - Addition
1-3	5/85	MILWAUKEE	WI	SIMONE ENGINEERING	INSTRUMENTS	1,190.00	PC - Pay Certificate
3PRS	5/86	MILWAUKEE	WI	SIMONE ENGINEERING	PRESSURE GUAGES	1,048.36	LW - Lein Waiver
3-3A	1/86	MILWAUKEE	WI	WAUSAU INSURANCE CO	INSURANCE	1,062.00	PC - Pay Certificate
1-2	4/84	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	1,227.09	PC - Pay Certificate
1-3	7/84	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	1,200.00	PC - Pay Certificate
1-4	10/84	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	2,200.00	SB - Submittal
1-4A	1/85	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	2,800.00	LW - Lein Waiver
2-1B	11/85	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	6,909.00	LW - Lein Waiver
2-1A	11/85	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	7,580.00	LW - Lein Waiver
3-1B	6/86	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	5,322.00	LW - Lein Waiver
3-1A	8/86	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	2,735.00	LW - Lein Waiver
1-7	10/86	NEENAH	WI	NEENAH FOUNDRY	CASTINGS	500.00	LW - Lein Waiver
4-1E	11/87	NEENAH	WI	NEENAH FOUNDRY CO.	MANHOLE RINGS AND COVERS	3,240.00	LW - Lein Waiver
1-3	11/84	RACINE	WI	MCGRAW EDISON	LIGHTS	2,500.00	PC - Pay Certificate
				19 Transactions	Total Amount for WI	1,682,064.62	

WYOMING

Money Spent in WY From 1/83 to 3/88

1-3	4/85	CASPER	WY	MICHAELS FENCE CO.	FENCING SUBCONTRACTOR	14,886.00	PC - Pay Certificate
1-7	10/86	CASPER	WY	MICHAELS FENCE CO.	FENCING SUBCONTRACTOR	9,790.00	LW - Lein Waiver
				2 Transactions	Total Amount for WY	24,676.00	

(Based on information available in WEB Association Files -- Not an Audited number)

SUBCOMMITTEE RECESS

Senator HATFIELD. If there are no other statements to be offered at this time, the committee will stand in recess until 2 p.m. this afternoon.

[Whereupon, at 11:20 a.m., the subcommittee recessed to reconvene at 2 p.m. the same day.]

(AFTERNOON SESSION, 2 P.M. MONDAY, APRIL 11, 1988)

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator DOMENICI [presiding]. The subcommittee will please come to order. Senator Johnston has asked me to chair this subcommittee for a few minutes this afternoon.

I have to apologize to our witnesses, however, because when I agreed to that assignment from the chairman, I didn't know that the budget resolution would be on the floor and I can't be in both places at once. I just left the floor and I will be here for 15 or 20 minutes. At the end of that time, if the chairman is not here, we will either recess or let the witnesses try to finish their testimony before the staff until the chairman arrives.

I welcome all of you to the hearing. We have a large number of witnesses that wish to be heard this afternoon. I would ask, in accordance with the notification each of the witnesses has already received, that every one exhibit a little bit of self-restraint and hold the oral testimony to a minimum. We want everybody who has come to have a chance to be heard.

Your detailed statements, which we asked you to prepare, and I am sure you have worked carefully on them, will be incorporated in the record in each case. If you would summarize those in the 5 minutes we asked you to use, it will be most helpful.

I am pleased to first recognize the distinguished Senator from Alabama, Howell Heflin. He desires to make an opening statement for the Alabama projects.

I've been told that the Alabama witnesses will not be on our agenda for awhile, Senator, but we would be delighted to hear your remarks. After Senator Heflin's testimony, we will proceed with other Senators and those who want to be heard with reference to the Colorado projects. I will call the names off as we proceed.

ALABAMA WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF HON. HOWELL THOMAS HEFLIN, U.S. SENATOR FROM ALABAMA

Senator DOMENICI. Senator Heflin, we welcome you here. We are delighted that you have taken the opportunity to appear before us, and we are pleased to hear you now.

Senator HEFLIN. Mr. Chairman, I appreciate you inviting me to appear here.

You will be hearing from a number of citizens of my state, who have been vitally interested in waterways for many years, and will be testifying about the various waterways that will be coming up, including the Mobile Harbor.

I have with me prepared statements that I would like to ask be made a part of the record dealing with the Alabama water projects generally, the Coosa-Alabama Waterway, Mobile Harbor, the Chattahoochee and Flint Waterways, as well as the Warrior-Tombigbee Waterway.

I have been working with the Corps of Engineers officers, including General Heiberg who is the Chief of the Corps of Engineers, and the Corps of Engineers' South Atlantic Division, as well as Colonel Bovine, who is the head of the Corps of Engineers Mobile District.

They are predicting that the Southeast, particularly Alabama, Georgia, and Mississippi, are going to be faced with another drought year, which will mean the third drought year in a row throughout the southeastern part of the United States will be suffering from a drought. They don't have any crystal ball, but, nevertheless, based upon good scientific approachs, they are predicting this.

This means devastation throughout the country, if it is a severe drought, and can mean a great deal of harm can be done to water transportation unless we take quicker steps dealing with maintenance and with some rehabilitation projects.

We in Alabama, in the Mobile Harbor, are in the process of deepening the harbor. That has started. We are off to a good start. That is in the Coosa-Alabama Waterway and the lower Alabama River have needed rehabilitation projects and this is vital to that river system, and hopefully, that can be done.

The Apalachicola, Chattahoochee, and Flint Rivers, known as the tri-state or the tri-river waterways. They have made a lot of progress as a result of those three states working together.

I would hope that particular attention would be given by the committee relative to these waterways that are vital to my state, and will be very important, particularly if this is drought year, as predicted. So, I ask that this committee give attention to all of these matters.

Senator DOMENICI. Thank you very much, Senator. Your prepared statements detailing your concerns will be made a part of the record, and again I thank you for your testimony. As is usual and customary for you, Senator, and certainly you have many assignments here, you always represent the interests of your state. We are delighted to have you here and thank you.

Senator HEFLIN. Thank you.

[The statement follows:]

STATEMENT OF SENATOR HOWELL HEFLIN

Mr. Chairman, in my previous testimonies on the tri-rivers system, I have tried to stress upon this committee the severe navigation problems which have existed on the system. Those problems were particularly troublesome during periods of low river flow, especially in 1986, when the region had the worst drought in 100 years.

Although traffic on the waterway was stopped in November 1987 because of low water levels, tonnage reached was still 940,498 tons for 1987, which is the fourth highest total in the last 9 years.

As you will hear from those here today to testify on behalf of the Apalachicola-Chattahoochee-Flint Waterway, during 1987 a study was done by barging options for moving the tri-rivers area forest products to northern markets. This study has generated much interest, because it has shown that a system such as this can be profitable under certain conditions.

Proposed legislation has been introduced to change the purpose of the Buford Dam and Lake project, now known as Lake Sidney Lanier, as authorized in the River and Harbor Act of 1946. This dam and reservoir is an important project of the Apalachicola-Chattahoochee-Flint Waterway river system. If the original goal is altered, then commercial navigation will be harmed and the area will be adversely affected. I urge you and those on the committee here today to oppose this legislation.

Mr. Chairman, the President's budget request for the 1989 fiscal year is $4.5 million for operation and maintenance funds on the Apalachicola-Chattahoochee-Flint Waterway river system, which includes George Andrews Lock, Dam, and Lake.

Mr. Chairman, I would also like to request $4.5 million for the Jim Woodruff Lock and Dam and Lake Seminole, in Alabama and Florida; $6.5 million for the Buford Lock, Dam, and Lake Sidney Lanier, in Georgia; $5.8 million for the Walter F. George Lock, Dam, and Lake in Alabama and Georgia; and $3.8 million for West Point Dam and Lake.

Mr. Chairman, I urge the committee to approve the request set forth today for operation and maintenance funds for the tri-rivers system.

Thank you, Mr. Chairman.

COLORADO WATER RESOURCE PROJECTS

STATEMENT OF WILLIAM McDONALD, DIRECTOR, COLORADO WATER CONSERVATION BOARD

ACCOMPANIED BY:

FRED V. KREOGER, PRESIDENT, BOARD OF DIRECTORS, SOUTHWESTERN WATER CONSERVATION DISTRICT OF COLORADO, ANIMAS-LA PLATA WATER CONSERVANCY DISTRICT

LEONARD C. BURCH, CHAIRMAN, SOUTHERN UTE INDIAN TRIBE

JUDY M. KNIGHT, VICE CHAIRMAN, UTE MOUNTAIN UTE TRIBE

Senator DOMENICI. We are going to move quickly then to the first agenda item, which has to do with projects in the state of Colorado.

As I understand it, Mr. Fred Kreoger, president of the Southwestern Water Conservation District and director of the Animas-La Plata District is here, as is Mr. William McDonald, the director of the Colorado Water Conservation Board.

Would you please come up to the table, Mr. McDonald. I believe Mr. Kreoger, Mr. Leonard Burch, and Ms. Judy Knight would like to join you in making the panel for Colorado and will submit testimony for the record.

We welcome all of you.

Mr. McDonald, let's start with you, and then proceed to the other witnesses.

Thank you all for being here.

Mr. McDONALD. Thank you, Senator. We appreciate your consistent effort in the last several years to chair the committee meeting when we are here.

My name is William McDonald and I am director of the Colorado Water Conservation Board. I am testifying today on behalf of the Honorable Roy Romer, Governor of the state of Colorado; Mr. Hamlet J. Barry, who is a member of his cabinet and executive director of the Department of Natural Resources; and for the water conservation board itself.

I have submitted a written statement which I would ask be included in the record and from there I will summarize briefly just a few highlights.

Senator DOMENICI. It will be made a part of the record.

ANIMAS-LA PLATA PROJECT, COLORADO AND NEW MEXICO

Mr. McDONALD. Most of our main emphasis is on the Animas-La Plata, as you well know, Senator, and a critical conclusion of the final settlement which we have achieved with the United States and the two Ute tribes. I would point out that we request, in contrast to the President's budget request, the sum of $7.8 million. The President's budget request was more on the order of $1.9 million.

We did that because, as part of the cost-sharing agreement with which you are well acquainted, we negotiated a 12-year construction schedule and we do not understand that the Bureau of Reclamation can do that schedule if it is not funded the $7.8 million for fiscal year 1989.

I would further emphasize that we would seek legislative language directing the Bureau to utilize that $7.8 million in fiscal year 1989 to purchase the site for the reservoir. The reservoir site is owned by our own Colorado Division of Wildlife.

We have a site that is not a problem. The division is most cooperative with us, but the division reserved that property some years ago from the Nature Conservancy and has attached to that deed a reverter clause which keeps the Nature Conservancy as part of the process. To unravel that situation, the property will probably have to be acquired.

The Bureau is telling us, however, that they have been directed by the Office of Management and Budget to not spend money for the acquisition of that reservoir site. We need that directive and we would seek it if we could because, as soon as that property can be purchased, we can resolve the problem of this reverter clause.

The importance of the reverter is that you cannot use the land for purposes inconsistent with wildlife habitat and management. We obviously need to be able to build and that has caused some concern to the Nature Conservancy.

COLORADO SALINITY CONTROL PROJECT

The second item I would touch on is the Colorado River Basin Salinity Control Forum of the Bureau of Reclamation. I would emphasize one key part. We seek sums for the Grand Valley unit, including the Lower Gunnison unit which is located in Colorado, greater than those sought by the President's budget.

We do so because the Bureau of Reclamation came into this state 4 years ago taking the position that it was an obligation of the state even though this is a federal program to accomplish certain things with respect to making the irrigation entities responsible for the operation and maintenance of the units after federal money has been expended and the improvements have been constructed.

We have accepted that obligation. I have personally attended to it for 4 years. It has involved the negotiations of contracts, having similar votes of shareholders in the two respective irrigation districts that handle these areas. We have even had statement of commitment that I had obtained this year and is on the Governor's desk for signing, statement of commitment that empowers irrigation districts to handle this federal program.

We did all that and accomplished it by this year, we met the schedule of the Bureau. Now, the President's budget doesn't even maintain that same schedule, and it is for that reason that we seek larger sums of money.

STAGECOACH LOAN, COLORADO

Colorado strongly supports the Stagecoach Reservoir project, a Small Reclamation Projects Act program. Congress directed that it be funded last year. The construction has commenced. The Water Conservation Board is financing more than 50 percent of that. I, in fact, prepared all the bills for the first year of construction.

Despite that congressional directive, the President's budget has not included the completion of that project. We respectfully request the balance of that small reclamation loan and grant which is a little better than $5 million.

SECTION 22 PLANNING ASSISTANCE

Finally, speaking on behalf of the Water Conservation Board, I would supplement my written remarks with respect to a request that $300,000 be earmarked for the state of Colorado under the Corps of Engineers section 22 Technical Planning Assistance Program.

This is an increasingly valuable program to the state of Colorado, by which the Corps can provide technical assistance to us in a variety of matters in which they have expertise. I increasingly am able to utilize that program in Colorado, but it is a relatively small program with priorities for in excess of the funding the Bureau can now provide.

We seek $300,000 in 1989 with $100,000 particularly earmarked for a flood control starting in Boxelder Creek which is the drainage that would be impacted by the relocation and exchange from the Denver International Airport. If you have ever been through Denver, I think you can understand the need to expand that area.

That modernization will substantially increase runoff on that drainage. We, therefore, have concerns about flood control problems and about opportunities to rehabilitate through existing small reservoirs that can serve as flood control as well as ground water recharge purpose.

The Corps of Engineers has commenced activities in the current year to the extent of about a $30,000 effort. We seek additional funding in order that we might conclude that this year.

I will conclude by simply stating the several other projects of the Bureau, the Dolores, Dallas Creek, Fryingpan-Arkansas, and Closed Basin projects and three projects of the Corps—Chatfield, Westerly Creek, and Fountain Creek—which are in the President's budget, and they completely have our support as proposed for funding.

Thank you.

Senator DOMENICI. Thank you very much, Mr. McDonald. Your written testimony will be made a part of the record.

[The statement follows:]

STATEMENT OF WILLIAM MCDONALD, DIRECTOR, COLORADO WATER CONSERVATION BOARD

Summary of Requests

Colorado requests appropriations for the Bureau of Reclamation greater than those set forth in the President's proposed budget, as follows:

	President's Budget	Colorado's Request
	($ in millions)	
(1) Construction		
Animas-La Plata	$ 1.981	$ 7.8
(2) Colorado River Salinity		
Construction	$15.363	$22.05
Advance Planning	0	0.8
Plan formulation	1.185	1.2
(3) Small Reclamation Projects Act Program		
Stagecoach Reservoir	$ 0	$ 5.037
(4) General Investigations		
Atmospheric Water Resources Management	$ 0	$ 4.0

Colorado supports the President's budget request for construction funding for the Bureau of Reclamation's Closed Basin, Dallas Creek, Dolores, and Fryingpan-Arkansas projects.

With respect to the Corps of Engineers' budget, Colorado supports the President's budget request for construction funding for the South Platte River, Westerly Creek, and Fountain Creek flood control projects.

Introduction

This statement is submitted by the Honorable Roy Romer, Governor of Colorado; Mr. Hamlet J. Barry, III, Executive Director of the Colorado Department of Natural Resources; and the Colorado Water Conservation Board, which is the state agency charged with the development of Colorado's water resources.

Bureau of Reclamation (Construction Projects)

Animas-La Plata Project. This is a joint Colorado-New Mexico project designed, among other things, to address the water supply problems which confront the Indian reservations in the project area. Other components of the project will serve non-Indian populations in Colorado and New Mexico with municipal water. Finally, project water would significantly strengthen the agricultural economy of southwestern Colorado.

In December, 1986, the United States, State of Colorado, Ute Mountain Ute Tribe, Southern Ute Tribe, and non-Indian water users in southwestern Colorado entered into an agreement settling the Tribes' long-standing reserved water rights claims, thereby avoiding costly and divisive litigation. The agreement has three major components:

(i) The delivery to the Tribes of water from the Animas-La Plata and the Dolores Projects and the quantification of additional water for the Tribes on various streams,

(ii) The establishment of Tribal development funds to assist the Tribes in making their reservations economically self-sufficient, and

(iii) The waiver by the Tribes of all of their reserved water rights claims.

A cornerstone of the final settlement agreement is the provision of water to the two Tribes from the Dolores Project, which is to be completed in 1993, and the Animas-La Plata Project, which did not receive its first construction appropriation until FY 1986 even though it was authorized by Congress in 1968 and was to have been built concurrently with the first delivery of water to the Central Arizona Project. The additional water provided by these projects will permit the continuance of non-Indian economies dependent upon existing water supplies, while simultaneously providing the Tribes with the water they need.

In light of the importance of the Animas-La Plata Project to the settlement, the State of Colorado, the San Juan Water Commission (New Mexico), and local Colorado water users have agreed to non-federally finance nearly 40 percent of the cost of the project. Indeed, Colorado has already appropriated nearly all of the money which it is obligated to provide.

As part of the cost-sharing arrangement, the Department of the Interior committed to a 12-year construction schedule for the project. Failure to meet that schedule could unravel the settlement agreement as it pertains to two of the rivers involved. To achieve this schedule, we believe that an appropriation of $7.8 million will be needed in FY 1988. The President's budget request seeks only $1.981 million. We ask Congress to honor the United States' commitment to this project, the Tribes, and the state by appropriating the $7.8 million needed to maintain a 12-year construction schedule.

Other On-Going Projects. We urge Congress to maintain the funding requested by the President for construction on four other on-going projects--the Closed Basin, Dallas Creek, Dolores, and Fryingpan-Arkansas Projects. Each of these is nearing completion and should be a high priority for funding. Furthermore, the Closed Basin Project will benefit both New Mexico and Texas and, as mentioned above, the Dolores Project is an integral component of the Ute Indian water rights settlement.

Other Authorized Projects. Colorado has five other authorized projects--Fruitland Mesa, San Miguel, Savery-Pot Hook, West Divide, and Narrows. In recognition of the budget constraints which the nation faces, we are not asking for funding for these projects in FY 1989. This should not, however, be taken as a lack of interest in the development of our precious water resources.

Bureau of Reclamation (Colorado River Salinity)

The seven states of the Colorado River Basin have endorsed a coordinated, basinwide approach to the reduction of salinity in the Colorado River. The salinity control units being planned and constructed by the Bureau of Reclamation are an

integral component of the overall salinity control program. We would call your attention to the detailed statement being submitted on behalf of the seven basin states, acting through the Colorado River Basin Salinity Control Forum, in which statement Colorado concurs. The Forum seeks, and Colorado supports, the sums set forth in the above "Summary of Requests."

Colorado is particularly concerned about the lack of funding in the President's proposed budget for the initiation of construction on the Lower Gunnison Salinity Control Unit (winter water system) and the inadequate funding which is proposed for continuing construction on the Grand Valley Salinity Control Unit. In both instances, the state and local water users have, at the Bureau's request, accomplished certain activities and prerequisites in order to enable these salinity control units to go forward.

We have met the schedules requested of us by the Bureau for its benefit. Now, the President's budget reneges on the very schedules to which we were asked to commit. We ask Congress to rectify this situation by appropriating $5 million for the Lower Gunnison Unit and $9 million for the Grand Valley Unit. We have met our obligations. The United States should do the same.

Bureau of Reclamation (Stagecoach Reservoir Project)

Colorado strongly supports the Bureau's Small Reclamation Projects Act program. Several Colorado projects have benefitted from this program in the past and we expect to have more candidates in the future.

Of immediate interest is the Stagecoach Reservoir Project on the Yampa River in northwestern Colorado. The State has appropriated $8.0 million to finance nearly half of the project's cost.

We request an appropriation of $5.037 million in FY 89 for the total remaining amount of the project sponsor's application. Congress made an initial appropriation to the project for the current fiscal year and construction is underway. This appropriation is therefore needed to complete construction in 1989.

Bureau of Reclamation (General Investigations)

We believe that the President's budget proposes too little funding for general investigations. While we do not doubt that changing times justify a reduction in and reorientation of the Bureau's planning activities, a reduction as substantial as that being sought is unwarranted. We urge Congress to provide sufficient funding to maintain a viable planning program in the years ahead.

In particular, we request that funding for the atmospheric water resources management program be restored, especially in the Colorado River Basin. This work, which has long had Colorado's support, is of mutual interest to the seven basin states. It is a long term research and demonstration program aimed at augmenting the water supplies of the river through winter orographic cloud seeding. While eliminating funding for such an effort may be expedient in the short run, it will prove to be short-sighted in the long run since the Colorado River is over-appropriated and will not be able to sustain the demands placed upon it in the future. The joint statement of the seven basin states which has been submitted in this regard has our support.

Corps of Engineers

The sums contained in the President's recommended budget are adequate for the timely execution and continuation of federal flood control projects in Colorado. We would caution, however, that any reduction in these budget requests would unnecessarily jeopardize the lives and properties of many thousands of Coloradans.

The President's request for the South Platte River project below Chatfield Lake will enable construction on that project to be completed. Located in the heart of the Denver metropolitan area, this is a critical flood control project. We would like to thank the committee for having helped bring this project to fruition.

We support the President's recommended budget for construction on the Westerly Creek flood control project in Denver and Aurora. This project is needed to enable local governments in the area to solve problems upstream from the proposed federal project, which would be located on Lowry Air Force Base. Those upstream problems cannot be addressed until the federal project goes forward.

Finally, we support the President's budget request for the Fountain Creek flood control project, which addresses major flood control problems in the heart of Pueblo. The solution of those problems will enable redevelopment activities which are of great importance to the economic welfare of that community to go forward.

Senator DOMENICI. If I might just indicate to the remaining three witnesses on the Colorado projects that we are trying to find Chairman Johnston to take my place. The chairman was not supposed to be here at this time, so I in no way want you to assume that he is missing your testimony.

I am the one who has to leave. The budget resolution is now up on the Senate floor, and we want to finish our preliminary work by about 3:30, so I am going to have to leave in about 5 minutes.

If we have not found a substitute, then we will recess, wait a little bit, and the staff will advise you as to the agenda.

Which of the three remaining witnesses that are here at the table feel that there is some matter of urgency that the committee ought to hear. I think we know precisely what the issues are, but we would be delighted to hear you.

Why don't we go ahead and start with you, Fred. Can you summarize your remarks in a couple of minutes?

Mr. KROEGER. Yes. You have my testimony and it will become part of the record, I am sure. That is the situation for many of my friends that are here with us today, they also have written testimony.

I want to state that in southwestern Colorado we sometimes forget that you are not our Senator. Even though we don't get a chance to vote for you, we appreciate very much the things you do for us in that area.

The Animas-La Plata is extremely important to our part of the state—northwestern New Mexico and southwestern Colorado—because we settled long-term Indian water rights on those rivers. As far as Colorado is concerned, those water rights date back to 1868.

Animas-La Plata is a project that does more things for more interests than any project I am familiar with. It not only furnishes supplemental water for lands that are meagerly irrigated at the present time and some drylands that have no water—I have witnessed in my lifetime all the heartache that comes when people plant their crops, they start to grow, and then they see them wither and die. I have witnessed the people having to leave the land. They lose their property.

I think the settlement of Indian water claims is perhaps more than adequate reason to build this project. We have joined together with both the Ute Tribes in Colorado and I think this is an example of a more beneficent approach to settling these rights than we have ever had before.

We urge that the funding be up to the $7.8 million capability at the Bureau of Reclamation, rather than the approximately $2 million that is in the President's budget.

Without taking more of your time, thank you very much.

[The statement follows:]

Statement of Fred V. Kroeger, Director, Animas-La Plata Water Conservancy District

I am Fred Kroeger of Durango Colorado. I am here to request the full Bureau of Reclamation capability funding for two vital southwestern Colorado water projects: $7.8 million for the Animas-La Plata Project and $28.441 million for the Dolores Project.

I am President of the Southwestern Water Conservation District of Colorado and have been a member of that Board for 38 years. I was honored to serve on the Colorado Water Conservation Board for 21 years and I am familiar with the water needs of Colorado. Never has a Colorado water project been as needed as the Animas-La Plata Project. Not only does this Project provide for the settlement of the Colorado Ute Indian Tribes' reserved water rights claims, the Project provides needed agricultural water to the non-Indian communities of southwestern Colorado, provides a stable domestic supply of water for cities in Colorado and New Mexico, and provides vital economic development potential for the area through the creation of new jobs and the creation of a major recreational reservoir.

The Final Settlement Agreement, which quantifies the Southern Ute and Ute Mountain Ute Indian Tribe's Winters water rights claims, is an historic example of what can be accomplished by compromise and cooperation. The State of Colorado, the Ute Indian Tribes, the water users of southwest Colorado, and the federal government will all benefit from the construction of the Animas-La Plata Project. The Final Settlement Agreement signed on December 10, 1986, will enable the two Ute Tribes to develop their agricultural, municipal and industrial potential on each of the streams which crosses the reservations in an orderly fashion with the certainty of a well-defined supply of water. The quantification and resolution of the Tribes' Winters water rights claims will also bring certainty to the non-Indian water users in southwestern Colorado. The Project will enable both Indian and non-Indian water users in southwestern Colorado to beneficially utilize their fair share of the waters of the Colorado River and its tributaries. The Project will allow the federal government to honor its commitments to the Indian people made in treaties and agreements which were signed over a hundred twenty years ago. All parties will avoid costly and divisive litigation over the nature and extent of the Tribe's reserved water rights claims. Finally, the state of Colorado will continue the responsible tradition of cooperating with its Indian citizens for the mutual benefit of both the state and the Indian tribes.

The voters within the Animas-La Plata Water Conservancy District recognized the value of the Project to all concerned and resoundingly supported the Bureau of Reclamation Repayment Contract with the District in an election held on December 8, 1987.

The Agreement has come about as a result of more than 30 years of close friendship and cooperation between the Southern Ute and Ute Mountain Ute Indian Tribes and the water districts of southwestern Colorado. We are proud of our achievement. We are aware of the bitter, divisive disputes in other parts of the west over Indian versus non-Indian water rights claims. What we achieved is a well-thought-out, reasonable and equitable agreement which divides the use of the waters of the San Juan Basin in a manner which will be beneficial to all. Bills are now before the Senate (S. 1415) and the House (H.R. 2642) which would implement the Agreement. Without the passage of this legislation, protracted litigation to resolve the Tribes' reserved water rights would cost millions of dollars and leave the Tribes without wet water to develop their reservations.

We believe the negotiations process which led to the settlement of the Tribes' water rights could become a model for such water rights negotiations throughout the west. The binding Cost-Sharing Agreement of June, 1986, which provides an upfront cost-sharing agreement for the construction of the Animas-La Plata Project is, likewise, a model for financing future water resource development projects in our nation. The Cost-Sharing Agreement marks the beginning of an age of partnership between the federal government, the states, and the local water users for the financing of critically needed water development projects.

The construction of the Animas-La Plata Project will change a dream into reality. The dream has been the ability of the people of southwestern Colorado to have the means to enjoy the beneficial use of the water resources of the Animas and La Plata Rivers. Farmers, ranchers, cities, towns, Indians and non-Indians have pursued this dream for over 50 years. Through good times and bad, the Indian and non-Indian water users of southwestern Colorado have stuck together and cooperated, even though at times that cooperation was painful, particularly to our Indian friends who were repeatedly urged by tribes of a different viewpoint to fight rather than negotiate. The reality is construction of the Animas-La Plata Project and a sufficient water supply for all in the San Juan Basin of southwestern Colorado and northwestern New Mexico. We in southwestern Colorado and northwestern New Mexico are entitled to have appropriated the full $7.8 million the Bureau of Reclamation is capable of spending.

Our entitlement comes as a result of the many compromises and sacrifices that we as a district, as a region and as a state have made in times past when Congress was considering such legislation as the Colorado River Storage Act of 1956 and the Colorado River Basin Project Act of 1968. The 1956 Act authorized the Animas-La Plata Project as a participating project and the 1968 Act authorized the construction of the Project. We have stood in line with our Indian friends for a long time. We now feel that we have rightfully taken our place at the head of the line.

The $7.8 million request for the Animas-La Plata Project represents money to be spent for the long awaited start of construction of the Project. The budget increase over the President's FY '89 budget request is vital to satisfy the commitment of the federal government made as a part of the Final Settlement Agreement to fund this Project at a level which would support a 12-year construction schedule. To honor the government's agreement, a $7.8 million funding appropriation is necessary.

I must also stress to you the value of the Dolores Project which is on the way to completion. It is the President's policy to fund water projects which are substantially completed to enable them to be finished as quickly as possible. An expenditure of $28.441 million is required to keep the Dolores Project on its current construction schedule. On behalf of the Dolores Project, I request that the Bureau's full construction capability of $28,441 million be appropriated.

Neither the Animas-La Plata nor the Dolores Project should be forced to proceed at less than full speed. These projects are vital to the economy of southwestern Colorado.

Thank you for your assistance in the past and your consideration of our current requests. The people in southwest Colorado correctly perceive this committee will be of invaluable assistance in resolving our water problems.

Senator DOMENICI. Thank you very much.

We were successful in getting $3 million in this year's appropriations bill, so we have put the project on a path that certainly justifies more than the President has asked for. We are going to do our very best to get more funding.

I hope you understand we are under some enormous pressures. Wherever we increase, we have to decrease something else, because there is only so much money to work with this year. We have already agreed on the amount for all domestic spending in the bipartisan budget summit last year. So, when something does up, something must come down.

It is a little different than usual. It is going to make it a little more difficult, but we are going to try.

Chairman Burch, we would be delighted to hear from you for a couple of minutes please.

It is a pleasure to see you again. I have worked with you before and I compliment you on your people's effort to this point in trying to get the Animas-La Plata project going. The hard work and conciliation that has been shown in an effort to get the project underway are truly remarkable, and we compliment you and your people for it.

Please proceed.

STATEMENT OF LEONARD BURCH, CHAIRMAN, SOUTHERN UTE INDIANS

Mr. BURCH. I am Leonard C. Burch, chairman of the Southern Ute Indian Tribal Council. On behalf of all members of the Southern Ute Tribe, I repeat the tribe's annual request that the U.S. Government appropriate funds needed to get the Animas-La Plata project underway.

Through a long and difficult negotiations process undertaken with good will and determination, the Indians and non-Indians of southwest Colorado were able to conclude a final settlement agreement which resolves the Southern Ute and Ute Mountain Ute Indian Tribes' reserved water rights claims.

The President, however, through his fiscal year 1989 budget request, threatens to go back on commitments made by the federal signers of the final settlement agreement. The federal negotiators agreed that they would support a finding level for the Animas-La Plata project which would assure a 12-year construction schedule.

The Bureau of Reclamation has indicated that in order to meet that 12-year schedule, the project requires an appropriation of $7.8 million. The President's budget requests less than $1.98 million, a shortfall of almost $6 million. Without full funding for fiscal year 1989, we will be denied the promised 12-year construction schedule.

The Animas-La Plata project is not a new project. It is one that has been studied and analyzed carefully over the years. We have been patient and we have trusted in the honorable intentions of those in the government who have pledged to protect our interests and to help us develop our tribal resources through wise storage and fair distribution of the waters of rivers that should serve our reservation and its people.

If water projects elsewhere have been approved and funded, why not this one? Did not the U.S. Government promise that after the studies were complete, construction would begin?

Indian people are no strangers to broken treaties and promises. The Southern Ute Indian Tribe entered into the settlement negotiations in good faith and with honor. The President's budget request does not meet the commitment of the federal government.

Quite frankly, I am sorely disappointed by the federal government's treatment of the southern Colorado Indian tribes. It is up to this committee to make certain that the federal government respects its obligations which it committed to as recently as December 1986.

And so, today, we must make still another appearance and yet another request that you stir the fires and rekindle the interest in this important undertaking.

The Southern Ute Indian Tribe depends in the Animas-La Plata project for water for agricultural and industrial use. Our future as a tribal entity depends in great measure on the availability of water in sufficient amounts to enable us to develop what lies on and under the lands allotted to us. Only by making productive use of our resources can we achieve the level of economic independence and self-sufficiency so frequently urged as the ultimate objective of the U.S. Government.

In times of international crisis, America casts about impatiently for alternative sources of energy to support its people and its industries. The Southern Ute Indian Reservation is an enormous repository of coal, coal to provide the power for industry far beyond the boundaries of our tribal lands and beyond the borders of our state.

This valuable resource cannot fulfill its potential without significant amounts of water. We look to the Animas-La Plata project as the surest means of making the needed additional water available to our tribe.

NEED FOR LEGISLATION

The final settlement agreement requires the enactment of federal legislation for its implementation. An agreement was reached with the Department of the Interior on language which will accomplish the desired results.

Under the terms of the agreement, federal legislation is needed to provide the tribe with relief from the Non-Intercourse Act, which otherwise would prohibit leasing of tribal water; to relieve or defer tribal repayment obligations for the construction of the Animas-La Plata and Dolores projects; to assure that federal reclamation law will not restrict the uses of tribal water; to authorize the appropriation of the federal contributions to tribal development funds; to authorize the waivers of tribal breach of trust claims; and to direct the Secretary of the Interior to comply with the administrative provisions of the agreement.

Although we hope to use our water rights on the reservation for the development of reservation resources, we recognize that problems may rise in meeting that goal. Like water users everywhere, the Southern Ute Indian Tribe may be better served by allowing others to use our water for a while in return for adequate payment.

We don't think that the Non-Intercourse Act should keep us from receiving the full value of our water rights. On the other hand, we know that some downstream users argue that the law of the river does not allow such transfers. Some of those entities want Congress to address this issue by prohibiting tribal leasing out of state.

Although the Tribe strongly disagrees with those who argue that the law of the river and the reserved rights doctrine forbid the leasing of our water out of state, we have agreed not to ask Congress to modify what it has previously said.

Instead, we are satisfied to have the courts answer these technical legal questions about the scope of the rights given the tribe in 1868 and to decide whether Congress has changed those rights over the years. I want to emphasize that the tribe is prepared to work with those who want additional assurances that the agreement and legislation to implement it do not seek to resolve this question, but rather leave the dispute open for future judicial resolution.

As you must be aware, the Animas-La Plata project resolves not only the Indian water rights claims but also a broad range of water problems, including water augmentation for projected municipal growth and the shortage of irrigation water for our non-Indian farmer neighbors.

The Animas-La Plata project is widely viewed as an example of the pioneer concept of neighbor for the benefit of all. Therefore, I request that this committee endorse an allocation of $7.8 million in construction moneys for the Animas-La Plata project.

Do not let this vital project die. Thank you for considering the needs of the Southern Ute Indian Tribe.

[The statement follows:]

STATEMENT OF LEONARD C. BURCH, CHAIRMAN, SOUTHERN UTE INDIAN TRIBE

I am Leonard C. Burch, Chairman of the Southern Ute Indian Tribal Council. On behalf of all members of the Southern Ute Tribe, I repeat the Tribe's annual request that the United States Government appropriate funds needed to get the Animas-La Plata Project under way.

Through a long and difficult negotiations process undertaken with good will and determination, the Indians and non-Indians of southwest Colorado were able to conclude a Final Settlement Agreement which resolves the Southern Ute and Ute Mountain Ute Indian Tribes' reserved water rights claims. The President, however, through his FY '89 budget request, threatens to go back on commitments made by the federal signers of the Final Settlement Agreement. The federal negotiators agreed that they would support a funding level for the Animas-La Plata Project which would assure a 12-year construction schedule. The Bureau of Reclamation has indicated that in order to meet that 12-year schedule, the Project requires an appropriation of $7.8 million. The President's budget requests less than $1.98 million, a shortfall of almost $6 million. Without full funding for FY '89, we will be denied the promised 12-year construction schedule.

The Animas-La Plata Project is not a new project; it is one that has been studied and analyzed carefully over the years. We have been patient and we have trusted in the honorable intentions of those in the government who have pledged to protect our interests and to help us develop our tribal resources through wise storage and fair distribution of the waters of rivers that should serve our reservation and its people. If water projects elsewhere have been approved and funded, why not this one? Did not the United States Government promise that after the studies were completed, construction would begin? Indian people are no strangers to broken treaties and promises. The Southern Ute Indian Tribe entered into the settlement negotiations in good faith and with honor. The President's budget request does not meet the commitment of the federal government. Quite frankly, I am sorely disappointed by the federal government's treatment of the southern Colorado Indian Tribes. It is up to this committee to make certain that the federal government respects its obligations which it committed to as recently as December, 1986. And so, today, we must make still another appearance and yet another request that you stir the fires and rekindle the interest in this important undertaking.

The Southern Ute Indian Tribe depends on the Animas-La Plata Project for water for agricultural and industrial use. Our future as a tribal entity depends in great measure on the availability of water in sufficient amounts to enable us to develop what lies on and under the lands allotted to us. Only by making productive use of our resources can we achieve the level of economic independence and self-sufficiency so frequently urged as the ultimate objective of the United States Government.

In times of international crisis, America casts about impatiently for alternative sources of energy to support its people and its industries. The Southern Ute Indian Reservation is an enormous repository of coal - coal to provide the power for industry far beyond the boundaries of our tribal lands and beyond the borders of our state. This valuable resource cannot fulfill its potential without significant amounts of water. We look to the Animas-La Plata Project as the surest means of making the needed additional water available to our Tribe.

The Final Settlement Agreement requires the enactment of federal legislation for its implementation. An agreement was reached with the Department of the Interior on language which will accomplish the desired results. Under the terms of the agreement, federal legislation is needed to provide the Tribe with relief from the Non-Intercourse Act, which otherwise would prohibit leasing of tribal water; to relieve or defer tribal repayment obligations for the construction of the Animas-La Plata and Dolores Projects; to assure that federal reclamation law will not restrict the uses of tribal water; to authorize the appropriation of the federal contributions to tribal development funds; to authorize the waivers of tribal breach of trust claims; and to direct the Secretary of the Interior to comply with the administrative provisions of the agreement.

Although we hope to use our water rights on the reservation for the development of reservation resources, we recognize that problems may arise in meeting that goal. Like water users everywhere, the Southern Ute Indian Tribe may be better served by allowing others to use our water for a while in return for adequate payment. We don't think that the Non-Intercourse Act should keep us from receiving the full value of our water rights. On the other hand, we know that some downstream users argue that the "Law of the River" does not allow such transfers. Some of those entities want Congress to address this issue by prohibiting tribal leasing out of state. Although the Tribe strongly disagrees with those who argue that the "Law of the River" and the reserved rights doctrine forbid the leasing of our water out of state, we have agreed not to ask Congress to modify what it has previously said. Instead, we are satisfied to have the courts answer these technical legal questions about the scope of the rights given the Tribe in 1868 and to decide whether Congress has changed those rights over the years. I want to emphasize that the Tribe is prepared to work with those who want additional assurances that the agreement and legislation to implement it do not seek to resolve this question, but rather leave the dispute open for future judicial resolution.

As you must be aware, the Animas-La Plata Project resolves not only the Indian water rights claims but also a broad range of water problems, including water augmentation for projected municipal growth and the shortage of irrigation water for our non-Indian farmer neighbors. The Animas-La Plata Project is widely viewed as an example of the pioneer concept of neighbor helping neighbor for the benefit of all. Therefore, I request that this committee endorse an allocation of $7.8 million in construction monies for the Animas-La Plata Project.

Do not let this vital project die. Thank you for considering the needs of the Southern Ute Indian Tribe.

STATEMENT OF JUDY KNIGHT, VICE CHAIRPERSON, UTE MOUNTAIN UTE INDIANS

Senator DOMENICI. Thank you very much.

We next have the vice chairperson of the Ute Mountain Ute Indian Tribe, Judy Knight.

We welcome you, and it is a pleasure to be with you.

Ms. KNIGHT. My name is Judy Knight and I am vice chairman of the Ute Mountain Tribe. I have submitted my testimony, so to save time I would like to summarize three major points.

First, we strongly support the requested appropriations for the Dolores and Animas-La Plata projects. These projects are part of water rights settlement that are providing our people with drinking water, parks, landscaping, fire protection, and opportunities for agricultural expansion for the first time since we were put on the reservation.

Second, we have already begun to have problems with the funding from BIA to keep up with the Dolores project irrigation development. We want to avoid similar funding problems with the road and powerline to serve our irrigated water system by having recreation build the canal.

We ask that the road and powerline be treated as project features so that the funds can be appropriated through Reclamation to be designed and built along with the canal.

Further, I want to stress that we are all making an effort to go from 200 irrigated acres, which is the extent our current water supply will allow, to 7,500 acres from the Dolores project beginning in 1993.

We have set up a profitmaking enterprise to manage our existing tribal projects and have hired a farm manager with a strong agri-business background. We have set up 125 acres for the irrigation project to see which cash crops will be possible.

The same team of agricultural managers and tribal interns are also working on the Dolores project. There is a strong relationship between planning and business development. We are working closely with our non-Indian neighbors to develop new management, new crops, and new processes to take advantage of new production from the projects.

We ask your support for the Dolores, Animas-La Plata appropriations for the advancement of my people. In particular, I ask that the access road and power facilities appropriated, designed and built through the Bureau of Reclamation.

Thank you.

[The statement follows:]

Statement of Judy M. Knight, Vice Chairman, Ute Mountain Ute Tribe

I am Judy Knight, Vice Chairman of the Ute Mountain Ute Tribe located in Southwestern Colorado. I am here to offer the strong support of the Ute Mountain Ute Tribe for appropriations for the Dolores and Animas La Plata Projects. These two water projects are the heart of the Water Rights Settlement that we have worked long and hard to negotiate with our non-Indian neighbors.

I am also requesting that road and powerlines essential to serving the Tribe's Dolores Project irrigated lands be appropriated, designed and constructed through the Bureau of Reclamation. I make this request for three reasons. First, we have already run into problems getting Dolores Project planning funds that we were supposed to receive through BIA. We want to avoid similar funding problems on the road and power lines. Secondly, the road and the powerline are in the same corridor and will be built at the same time as the Towaoc Canal, and could most effectively be designed and built by one entity. Finally, the Bureau of Reclamation is in the business of building water projects, and has the design and inspection expertise to insure the best possible facilities for the Tribe.

We have testified many times about the critical nature of the Dolores and Animas La Plata Projects and the Water Rights Settlement to the future of the Ute Mountain Ute Tribe. I am pleased to tell you that the initial benefits from the Dolores Project and the Settlement are in sight, and that the Tribe is actively gearing up to make these benefits a reality.

By the end of 1989 my people for the first time will have high quality drinking water available to every home in our Tribal community of Towaoc. We will have water to realize the full potential of our industrial park, and to provide fire protection to the entire community. We will also, for the first time in our history have water to develop community parks and landscaping around our homes. These are things that other communities take for granted but these opportunities, for my people, offer the promise of a new future.

In 1993 we are scheduled to begin receiving irrigation water from the Dolores Project. Our irrigated acreage will go from less than 200 acres, which is the extent of our current water supply, to over 7,500 acres. This represents a big expansion, but we are actively getting ready for the economic opportunities that the added irrigation makes possible.

The Tribal Council has consolidated our existing irriagted land and our Tribally owned cattle herd into a profit making enterprise. We have hired a farm manager with large scale agribusiness experience, including Indian irrigation projects. With funding assistance from the BIA, we have developed an irrigation demonstration project which includes a center pivot and three sideroll sprinklers of the type that we will use on the Dolores and Animas La Plata

Projects. In addition to growing cattle feed, we are growing and finding markets for a series of cash crops. Our demonstration project is being totally operated by a Tribal member who is being trained by the Farm Manager.

We have hired one of the most respected cattlemen in the four corners region to be our cattle foreman. We have substantially improved our herd and are in the process of expanding it to 600 head. We have recently secured a loan from a local private financial institution to purchase 200 additional cows. Our Tribal people are getting an opportunity to apply their traditional reliance on livestock to a modern livestock production enterprise. Our traditional interest on livestock, the added production from the Dolores and Animas La Plata Projects, and the vast grazing areas on our reservation provide the foundation for a profitable cattle enterprise.

The same team of agricultural managers and Tribal interns are working with a water engineer and a planner in preparation for the physical and financial development of the Dolores Project. The organization, production, and business experience that is being gained from immediate Enterprise and Demonstration Project activities provides a concrete basis for Dolores Project physical and financial planning.

The combination of strong management and the employment and advancement of Tribal members, that has made our construction company a success will be applied to the development of our agricultural enterprises. We have gone out and gotten the expertise we need to develop project water resources, but the Tribal people working in the farm and ranch enterprise will be working with the survey crews, at the drafting table, and on the construction crews as the Dolores Project is developed. These same tribal people will be prepared for supervisory and management positions in the Enterprise when they are ready.

The Tribe is also working with local governmental and agricultural representatives in the development of a regional organization which is taking an integrated approach to the processing, marketing and diversification of local agricultural production in anticipation of the Dolores and Animas La Plata Projects. The Tribe and our non-Indian neighbors are working closely to integrate the Tribe's expanded agricultural capability with the overall improvement of the local agricultural economy.

Summary

I ask you as members of the Appppropriations Committee for your continued support as we develop our water resources from the Dolores and Animas La Plata projects for the advancement of my people. In particular, I ask for your continued support of appropriations for the Dolores and Animas La Plata Projects. I further request your support for the appropriation, design and construction of the essential Dolores Project access road and powerlines through the Bureau of Reclamation. Thank you for your support.

SAN LUIS CLOSED BASIN PROJECT, COLORADO

STATEMENT OF HAROLD L. ZIEGLER, PRESIDENT, RIO GRANDE WATER CONSERVATION DISTRICT

Senator JOHNSTON [presiding]. Senator Shelby, are you in a hurry? I could run you in.

Senator SHELBY. Mr. Chairman, I can wait.

Senator JOHNSTON. Next, we will hear from the Rio Grande Water Conservation District on the subject of the San Luis closed basin project.

Mr. ZIEGLER. Good afternoon, Mr. Chairman and members of the committee.

Thank you for the opportunity to appear before you for the closed basin authorization.

I am Harold Ziegler, president of the Rio Grande Water Conservation District. I am here on behalf of the San Luis Valley. My written testimony describes the San Luis basin project in greater detail.

In summary, I would like to say that the project was authorized in 1972, has been under construction for 8 years, and was scheduled to be completed in 1991. The Bureau of Reclamation has done a tremendous job of keeping the project on schedule.

The project is not a traditional water project, it is truly a water salvage project. Water lost through evapotranspiration in the large sump area of the San Luis Valley is being reclaimed and added to the waters of the Rio Grande River. This benefits Colorado water users, water users in Texas and New Mexico.

We have support from all three states and the U.S. Government on this project. The project is about 60 percent completed. It has five stages and stages I and II are completed, III is partially completed. It only produces about 35 percent of the water of the complete project. Therefore, additional funding is money best spent, because you get more water for the dollars spent.

The project is part of the overall water management in the San Luis Valley. It is one of the few federal projects we have. The farmers themselves have built the reservoirs, the canal systems, and have instigated in the last couple of years programs for the management of the water in the underground. The closed basin is now an important part of that program, to salvage and then use the recaptured waters that are going to waste.

The President's budget recommends $10.3 million. The Bureau of Reclamation tells us that this is enough money to keep the project on schedule. We request that you include the $10.3 million request in your bill. If we do not obtain the appropriation, construction will be shut down which results in enormous additional costs when the project is again funded in future years.

Are there any questions?

[The statement follows:]

STATEMENT OF HAROLD L. ZIEGLER, PRESIDENT, RIO GRANDE WATER CONSERVATION DISTRICT

Mr. Chairman and distinguished members of the Committee, this testimony is submitted on behalf of the Board of Directors of the Rio Grande Water Conservation District.

I. Introduction

The Rio Grande Water Conservation District is a political subdivision of the State of Colorado established pursuant to the provisions of Colorado Revised Statutes 37-48-101, et seq. The District is charged with the conservation, use, and development of the water resources of the Rio Grande and its tributaries within Colorado and as such is the local sponsoring entity of the Closed Basin Division of the San Luis Valley Project, Colorado (commonly called the "Closed Basin Project"). The District's Board of Directors represents the five counties in Colorado which will be benefited by the Project. These five counties encompass the vast majority of the land in the Rio Grande drainage within Colorado.

The San Luis Valley receives less than ten (10) inches of average annual precipitation and relies, almost exclusively, on irrigation to support its agricultural economy. Of the approximately 600,000 acres of irrigated land, about 425,000 acres are cultivated, with half the acreage being used to raise barley, primarily for malting, and potatoes, and the remainder being used to raise hay and alfalfa, other small grains and vegetables. In addition to natural shortages, the single most important limitation on the availability of water for irrigation is the restrictive effect of the Rio Grande Compact. The Closed Basin Project will help to alleviate that restriction by adding water to the system. It is a true water salvage project which will permit the continued cultivation and use of the existing farmland.

II. Description of the Project

A. Physical Circumstances. The San Luis Valley is located in south-central Colorado. The Rio Grande rises in the San Juan Mountains to the west of the Valley, flows southeasterly through the valley to Alamosa, then runs south into New Mexico, then along the border between Texas and Mexico. The Closed Basin is a hydrologic feature north of the Rio Grande in the San Luis Valley. It is created by a hydraulic divide that prevents waters flowing out of the mountains on the north end of the Valley from reaching the Rio Grande. Water within the basin flows toward a sump area in the northeastern portion of the Valley, where most of the water is lost to non-beneficial evapotranspiration. The sump area is believed to be separated from the lower portions of the Valley fill by an aquiclude called the Blue Clay Series, which lays about 100 feet below the surface. The interaction between the hydraulic divide and the Blue Clay creates the trap which forms the sump. The water below the Blue Clay Series is generally under artesian pressure while the water above the Blue Clay Series, in the sump, is not.

B. History of the Project. The potential for a project to salvage water in the sump area of the Closed Basin has been recognized for well over 50 years. In fact, that possibility was expressly recognized in the Rio Grande Compact (53 Stat. 785). On October 20, 1972, Public Law 92-514 was enacted which authorized the construction, operation, and maintenance of the Closed Basin Project. The primary purpose of the

Project is to salvage water which is now being lost through non-beneficial evapotranspiration. Salvage is accomplished through a series of wells which are pumped to lower the water table in the sump area of the basin. The wells only withdraw water trapped in the shallow aquifer above the Blue Clay Series and north of the hydraulic divide. The pumped water is discharged into a conveyance channel which carries it across the hydraulic divide and delivers it to the mainstem of the Rio Grande in order to assist Colorado in making the deliveries required of it under the terms of the Rio Grande Compact and to permit other beneficial uses of the water.

The authorizing legislation for the Closed Basin Project has been amended on two occasions. The most recent amendment, in 1984, was to modify and improve wildlife enhancement features of the Project (H.R. 2823).

The Project was envisioned as a solution to several water resource problems in the Rio Grande Basin. First, the Rio Grande Basin is notoriously water short in all but the rarest years. Second, the Rio Grande Compact imposes strict obligations on the State of Colorado to deliver water each year to the States of New Mexico and Texas. This obligation normally results in substantial curtailments of diversions by Colorado water users in order to meet Colorado's commitments. Third, the United States has a treaty commitment to the United States of Mexico to share the waters of the Rio Grande (34 Stat. 2953). Fourth, National Wildlife Refuges in the San Luis Valley have a need for additional water. When fully constructed, the Project will assist in meeting all of these needs by providing additional water supplies not otherwise available.

At the time of Project authorization, the State of Colorado was allegedly in debt to the States of New Mexico and Texas under the terms of the Rio Grande Compact. The alleged indebtedness exceeded 900,000 acre-feet. This shortfall gave impetus to the authorization for the Project. Today, that indebtedness no longer exists due to a series of unprecedented and truly unique years in which the water supply in the Basin far exceeded all historical records.

The decree for the Closed Basin Project was obtained by the Rio Grande Water Conservation District in Case No. W-3038 in a proceeding before the Water Court for Water Division No. 3 State of Colorado. The appropriation date awarded to the Project is July 31, 1963. The decree was obtained at the request of the United States, which had not been joined in State court adjudication proceedings under the McCarran Act. The decree has been dedicated to the Bureau of Reclamation for the use and benefit of the Project.

III. Applicable Statutes

A. The Closed Basin Project authorizing legislation, P.L. 92-514 (86 Stat. 954), as amended by P.L. 96-375 (94 Stat. 1507), and as further amended by H.R. 2823 in 1984.

B. Rio Grande Compact (73 Stat. 785).

C. Treaty with Mexico (34 Stat. 2953).

IV. Project Status

Construction of the Closed Basin Project has been segmented into stages (Stage 1-2, 3, 4, and 5). Stage 1-2 is completed and operating. Stage 3 is close to completion and

should be operational during 1988. The wells in stages 4 and 5 are completed, the conveyance channel is completed, and all of the rights-of-way for the pipeline laterals in Stages 4 and 5 have been acquired. The Bureau of Reclamation has done an excellent job in managing the Project, and water was delivered to the Alamosa National Wildlife Refuge and the Blanca Habitat Area and to the Rio Grande from Stage 1-2 both this year and last year. Additional funding will be used to continue the construction schedule established by the Bureau of Reclamation to insure completion of the Project.

V. Appropriation Request

The Administration's proposed budget for FY 1989 requests the appropriation of 10.8 million dollars for ongoing construction of the Closed Basin Project. That is the amount of money that can be utilized by the Bureau of Reclamation to secure continued construction in accordance with the current schedule.

We strongly support the Administration's request. It will permit this most important project to move toward completion. It will insure that the construction activity is not interrupted, which would result in substantial additional costs and inefficiencies, and it will allow the Bureau of Reclamation to hold to its construction schedule.

VII. Conclusion

The Closed Basin Project is vital to the long-term health of our area. It is two-thirds completed and the Administration's budget for 1989 will allow the Bureau of Reclamation to continue construction on schedule. Please include the requested sum of 10.8 million dollars in the FY 1989 budget. Thank you.

ADDITIONAL PREPARED STATEMENTS FOR THE RECORD

Senator JOHNSTON. I'm sorry, but we must conclude the Colorado testimony. We have your prepared statements which I will make part of the record at this point.

[The statements follow:]

STATEMENT OF LARRY H. DEREMO, MEMBER, BOARD OF DIRECTORS, DOLORES WATER CONSERVANCY DISTRICT

INTRODUCTION

Thank you, Mr. Chairman, not only for the opportunity to testify before this committee this morning, but for the past appropriations and support you have given the Dolores Project.

My name is Larry Deremo. I was raised in Dolores County, Colorado. Except for a tour of duty in the United States Army during the Korean Conflict, I have farmed there all of my life. Presently, my wife, Joan, and my two sons, Lyle and Rick, operate several farms. The principal crops we raise are dryland pinto beans, wheat and alfalfa. My residence is in the small town of Dove Creek, where I have served several terms as a town councilman. It is from these constituencies and perspectives that I was appointed to be a member of the Board of Directors of the Dolores Water Conservancy District in July of 1986. By lease arrangement, I am a farmer in the, yet to be constructed, but now budgeted for, "Dove Creek Block" of the "full service" area of the Dolores Project.

SUMMARY OF REQUEST

(1) The Dolores Water Conservancy District excitedly and enthusiastically supports the President's budget request of $28.441 million for the Dolores Project.

(2) Support the request for $7.3 million for the Animas-La Plata Project.

TESTIMONY

Mr. Chairman, I am very pleased to be here this morning to enthusiastically support the President's request of $28.441 million for the Dolores Project.

The reason I am pleased is because, in FY 88, the Dolores Project was only funded for about one-half of its needs. The FY 89 budget restores "full funding" to our Project. The Administration's rational for last year's short funding was to divert the money to other projects nearer completion. Since the Dolores Project was 60 percent complete at that time, it did not make sense to us. So it is especially gratifying to see funding "back on track".

EXCITING TO SEE CONSTRUCTION FUNDS FOR REACH THREE

Having just introduced myself you can now imagine how exciting it is for me, "a drylander", as well as all of the residents of Dove Creek, to actually see a proposed budget that provides for the construction of the final leg of the delivery system that will, after eighty-one long years of planning, politicing, traveling, begging, negotiating and yes testifying before Congress, get water to Dove Creek.

DOVE CREEK HAS ALWAYS BEEN A PRIME MOTIVATING FORCE

The residents of the Dove Creek area have been, not only committed to the support of this project, but have in many instances been the motivation and leaders in movements that furthered its cause. One has only to understand two perspectives to sympathize and appreciate our joy at the final realization of a "long, long time dream". First, the farmers perspective, of planning, hoping, investing time, money and machinery, in attempting to raise a crop

of "dry land" pinto beans, alfalfa or small grain, only to see it dry up and yields diminish to less than profitable levels, all because of the lack of water; or second, the Town residents perspective, who must depend on a domestic water system that must lift water over 1,000 vertical feet, through a pipeline system that has once been "washed out" by heavy rain because of its required precarious location along a canyon wall.

DEMONSTRATED COMMITMENT BY FARMERS AND TOWN RESIDENTS

The farmers recently demonstrated their solid support by organizing and sending to the Administration many letters questioning the FY 88 funding reduction and urging "full funding" for FY 89.

The residents of the Town of Dove Creek recently demonstrated their full support by requesting their "Block Notice" for their allocation of municipal and industrial water, even though the full delivery system (Reach III of the Dove Creek Canal) is not yet under construction.

Further interest and support is evidenced by the fact that, since an ample and dependable supply of water is now a certainty, there is a movement in the rural Dove Creek area to establish a domestic water delivery system.

WILLIAMS DRAW ROAD AND PROJECT POWER PLANTS

The FY 89 budget calls for three other contracts of special interest to me. They are the Williams Draw Road, the McPhee Dam Power Plant and the Towaoc Canal Power Plant. The Williams Draw Road is the "final leg" in the road system that provides access around the north side of McPhee Reservoir, instead of the access that used to be through the Reservoir area. This short 3 mile segment of re-aligning, re-constructing and graveling an existing narrow, steep and winding canyon road will greatly improve this northern access.

This access is not only for the area livestockmen, who have been the traditional users, but for the increasing recreation traffic, whether it be for whitewater boaters, for fishermen or for sightseers. This additional traffic is a direct result of the opportunities provided for by the McPhee Dam and Reservoir. This is especially true for Colorado's newest "Gold Medal/Catch & Release" fishery that has been created downstream below McPhee Dam. This fishery is only possible because of the minimum release provided by McPhee Reservoir, since in the pre-Dolores Project days this stretch of the Dolores River was "bone dry", due to upstream transbasin diversions, during the five month irrigation season.

The Dolores Water Conservancy District has always been an advocate, of the two Project power plants, which were not originally included as Project features. Therefore, it is a realization of one of our goals and certainly gratifying to see these features now included in a budget.

CONCLUSION

Mr. Chairman, as you can see from my testimony, the patrons of the Dolores Water Conservancy District are extremely happy and strongly concur with the President's proposed FY 89 budget for the Dolores River Reclamation Project and urge this committee to adopt it.

Again, on behalf of the people in our area, we thank this committee for their support of our project.

Statement of John Murphy, President, Board of Directors, Animas-La Plata Water Conservancy District

I am John Murphy, President of the Board of Directors of the Animas-La Plata Water Conservancy District, a former Mayor of the City of Durango, and a lifelong resident of southwest Colorado. It is my privilege to appear before this committee to request the full Bureau of Reclamation funding capability of $7.8 million for the Animas-La Plata Project.

I am here before you as a result of long and hard negotiations among the water users in southwestern Colorado, the two Colorado Ute Indian Tribes, the State of Colorado and the federal government, and as a result of the dedicated efforts of the voters of the Animas-La Plata Water Conservancy District. As a result of the thousands of hours of diligent effort by hundreds of people at all levels of government, the Colorado Ute Indian Water Rights Settlement Agreement was executed on December 10, 1986. This agreement will avoid litigation which could have taken years, caused enormous uncertainties about water rights, cost millions of dollars, and pitted Indians against their non-Indian neighbors. Such litigation would most certainly have adversely affected the development of both the Indian and non-Indian economies of southwestern Colorado and created bitterness and distrust between the Indians and their non-Indian neighbors. The people who live and work in southwestern Colorado will gladly tell you that we have long taken pride in our relationship with our Indian friends and neighbors and our neighbors in New Mexico. We are especially proud of what we have accomplished over the past several years to resolve our dispute over water.

As a result of the dedicated efforts of hundreds of local volunteers, the voters of the Animas-La Plata Water Conservancy District turned out en masse on December 8, 1987, and voted 3 to 2 in support of the Repayment Contract between the Bureau of Reclamation and the District. In that election the response to the Animas-La Plata Project by the agricultural interests in southwest Colorado was overwhelming. In the heart of the agricultural dryland, the Project passed three to one. Prior to the election, in the small community of Marvel, Colorado, excellent presentations by the Bureau of Reclamation were received with enthusiasm. But even more important, at those meetings farmers who are already irrigating with water from the Dolores Project extolled the value of project water. The dryside farmers in La Plata County are convinced of the merits of the Project.

A small number of farmers from neighboring Montezuma and Dolores Counties have stated that the Animas-La Plata Project is unnecessary. The true voice of the farmers in our area, however, was heard in the election. We resent outsiders representing to Congress what is is in the best interests of our people. The farmers of our area know what is in their best interest, the Animas-La Plata Project. We overwhelmingly support construction of the Animas-La Plata Project to allow farming to continue as a way of life and a vital aspect of our area's economy and to settle the reserved water rights claims of the two Colorado Ute Indian Tribes.

Perhaps it is difficult for those who live in our well-saturated Nation's capital to appreciate the critical significance of water to southwestern Colorado. To illustrate our situation, let me point out that Washington, D.C. has an annual precipitation of approximately 40 inches, whereas Durango receives only 19 inches, and more than half of that occurs between October and the end of April. Thus, with only about seven inches of rainfall, and often less, during our growing season, we have to

look to water reclamation projects to provide the moisture to ensure the survival of our crops, to help meet our municipal water requirements, and to develop such industry as we can attract to our area. Unless we capture the snow melt from our mountains and store it in reservoirs in the spring for prudent use during the dry summer months, we cannot hope to thrive.

An integral part of the Final Settlement Agreement was a commitment by the federal government to support funding for a 12-year construction completion schedule for the Animas-La Plata Project. The Bureau of Reclamation estimates that $7.8 million is required during fiscal year 1989 to achieve this rate of construction. The fiscal year 1989 Presidential request, however, is short by almost $6 million. Therefore, on behalf of the Animas-La Plata Board, I turn to you with confidence that our long years of negotiations and local effort will not be erased by inadequate funding. Thank you very much for your attention and consideration.

Joint Statement of J. Pat Greer and Richard M. Dossey, Board of Directors, Animas-La Plata Water Conservancy District

We are J. Pat Greer and Richard M. Dossey, members of the Board of Directors of the Animas-La Plata Water Conservancy District. We urge your support for the full $7.8 million in funds to begin construction of the Animas-La Project.

We are drysiders who live and farm in the semi-arid region to be served by the Project and we support our families through dry land farming. We are as aware as anyone of the difference irrigation will make in our ability to produce a living from our lands. We do the best we can every year to grow enough pinto beans, wheat and alfalfa to provide a living for our families. Our big problem is that we cannot depend on getting enough rain to keep the crops growing.

Things generally look fine in the spring. The soil is ready for planting; we put out the seed; we watch things start to grow. Then we have to wait and see if our gamble on the weather is worth it. Because we don't have a reliable source of water, we find that about three or four years out of ten we wind up with a "short crop," which is about enough at harvest time to keep us going but not enough to make farming worth the effort. And sometimes we fail to harvest even the "short crop."

We have shared the disappointment when potentially bumper harvests have deteriorated and crumbled to nothing because of erratic rainfall and lack of irrigation. Access to irrigation water from the La Plata River is limited to the first few months of the growing season. There is an urgent need for additional water supplies for irrigation in July, August and September because the snow melt has ended. About mid-June the La Plata River either dries up or is on call to meet the Interstate La Plata River Compact with New Mexico. The result is that unless there is a chance rain storm our flourishing crops wither and die for lack of water.

Our soil is rich and will support valuable crops but without a reliable water supply we are limited to the farming methods practiced by the earliest settlers. Although agriculture is the oldest continuing industry in the area, the lack of a regulated irrigation supply has significantly limited

the production of crops. Crop yields have been low and the diversity of crops has been restricted. Engineering studies indicate that the existing deplorable conditions can be overcome with a water storage project to meet our water needs from late summer to early fall. The Animas-La Plata Project, when fully operational, will enable us to capture and store water when it is plentiful, and distribute and use it during times of shortage. The junior appropriators on the Animas River have never been shut off. The Animas-La Plata Project will utilize the abundant water from the Animas River to assist those now dependent on the sporadic flow of the La Plata River. The Project will stabilize the agricultural production of our farms and ranches and allow the people of our area to realize their long-held aspiration for a better life. Drysiders, therefore, voted overwhelmingly for the repayment contract between the Animas-La Plata Water Conservancy District and the Bureau of Reclamation in the election held on December 8, 1987.

Not only will the Animas-La Plata Project assist drysiders, the Project will help all in southwest Colorado. Although the Project was at the outset projected to have a benefit-cost ratio of 1.6:1, a recent study by Dr. Bernard Anderson, Professor of Economics at Fort Lewis College, reflects ratios in expanded direct benefits of 1.71:1, and in expanded total benefits of 2.82:1.

The Animas-La Plata Water Conservancy District is one of the signatories of the Final Settlement Agreement to satisfy the water rights claims of the Southern Ute and Ute Mountain Ute Indian Tribes in major part through the construction of the Animas-La Plata Project. We were proud to have been a part of this settlement to achieve the common good. Without this negotiated settlement of the reserved rights allocations for the Tribes, we would have been at loggerheads over water with our Indian neighbors. All parties recognize that by building the Animas-La Plata Project there will be sufficient water to allow growth and prosperity throughout southwest Colorado for Indian and non-Indians alike.

The Animas-La Plata Project is our best hope to make the dryside the kind of farmland we need in our part of the country. We cannot, however, build this project without federal assistance. We therefore repeat our pleas of other years, that you help provide us the means of making the best use of our fertile soil. We are here today to request your continued help in achieving this goal. We ask your support for appropriation of $7.8 million so this much-needed project will not suffer further delay.

STATEMENT OF DORIS BRENNAN, LA PLATA COUNTY COMMISSIONER, COLORADO

I am Doris Brennan, a member of the Board of County Commissioners of La Plata County, Colorado. I have been authorized by my Board to give its full and unqualified support to the $7.8 million request for funding for the Animas-La Plata Project.

The Commissioners of La Plata County have long recognized the need for the Animas-La Plata Project. Commissioners for the last eighteen years have publicly supported the Project because the county-wide benefits are obvious and the county-wide need is critical. The vast majority of county residents voted on December 8, 1987, in favor of conserving our water resources, preserving our water rights, and maintaining our cordial and supportive relationship with our Indian neighbors.

As a County Commissioner I must see to the interests of all our La Plata County residents, including those who reside on the Southern Ute Indian Reservation. There is an excellent working relationship between the Tribe and the non-Indian communities of our area. La Plata County, for example, has cooperated with the Tribe on road construction and maintenance, jurisdictional issues, land for our college, and in numerous other areas. Only on the issue of water has there been any real potential for a parting of ways.

The tributaries of the San Juan River serve the municipal, domestic, industrial and agricultural needs of both Indians and non-Indians in southwest Colorado. These tributaries are the subject of conflicting claims. The cost of litigating these conflicting water rights is of such magnitude that interested parties conducted thousands of hours of negotiations over two years to reach a settlement of the Colorado Ute Tribes' water rights. This cooperative effort should not be wasted.

The Animas-La Plata Project is the heart of this negotiated settlement. The Southern Ute Indian Tribe has agreed to a specific amount of water from the Project which would allow existing water rights to continue unabated as well as provide for large scale non-Indian water usage without detriment to any party.

The Southern Ute Indian Tribe's water would assist in major coal development by the Tribe. Coal development would alleviate wide-scale tribal unemployment. I believe that our environment would be fully protected under such development. I know of no group of individuals more naturally attuned to protecting our environment than our Indian neighbors.

As a County Commissioner I oversee land use functions within the county. I can assure you that long-term growth in La Plata County is a reality. People come to our area because of the quality of life and great recreational opportunities. Although the current development picture is not rosy, after this slight setback, growth will continue at an ever-increasing rate. This population growth engenders a critical need for a stable and known supply of water both in municipal and the outlying areas. The Animas-La Plata Project is the answer to a stable and known water supply for municipalities in both Colorado and New Mexico.

I believe we must do something to preserve the agricultural economy in this area. Population growth in La Plata County has involved conversion of many of our finest agricultural lands. This conversion occurs because we lack a constant supply of water to sustain growth. It is my understanding that by signing the contract with the Bureau of Reclamation on the Animas-La Plata Project agricultural land conversion will slow down since this water will be earmarked specifically for irrigation purposes.

Not only will the Animas-La Plata Project provide a secure water source for all citizens of our area, it will provide dryland farmers of La Plata County with needed assistance. The uncertainties of the weather often destroy crops or severely diminish crop values. Agriculture is an important economic factor in La Plata County and we can foresee the tremendous boost to the economy if a consistent supply of water is secured through the Animas-La Plata Project. The Project will supply continuous irrigation to 70,000 acres where only 10,000 acres are irrigated now. While the Animas River has never been called, the La Plata River located in what is aptly known as the 'dry side," is on call after mid-June. There has not been a year when there has not been a call on that river. The beauty of the Animas-La Plata Project is that it will take the abundant Animas River water and provide it to the very fertile "dry side" soils.

Based on 1979 figures, with the construction of the Animas-La Plata Project, the annual growth of agricultural production would be increased by approximately $18,500,000. Multiplying this figure by seven, which is the number of times a dollar turns over in our community, you can see that the beneficial effect on our small area would be vast.

The Animas-La Plata Project represents stability for the economic life in La Plata County. Presently many of our children are forced to leave this area and find work elsewhere because there are not enough jobs locally. The Project, after completion, will supply jobs in both Colorado and New Mexico. The increase in jobs will also have a multiplying effect. La Plata County is heavily dependent on tourism. Ridge's Basin Reservoir will provide a much-needed, water-based recreation area in the heart of the county.

The Animas-La Plata Project certainly represents a wise use of federal tax dollars not only because it will provide jobs and ensure a stable economy, but also because in large measure it will be repaid and also provide for the development of scarce energy resources.

Finally, I would like to point out that this project has been approved for a long time. It has not been built because other projects were funded ahead of it. Now the construction of those projects is nearing completion and more monies should now be available for those water projects which are a part of the entire Colorado River Basin water resource plan.

The very future of southwestern Colorado turns upon the construction of the Animas-La Plata Project. As you know, I am an elected official, as are each of you, and it will be to the credit of all of us if you support full funding for the Animas-La Plata Project.

Statement of David Potter, General Manager, La Plata Electric Association, Inc., Colo.

My name is David Potter. I am the Manager of La Plata Electric Association, Inc., a non-profit, member-owned corporation established to transmit and distribute electricity within southwest Colorado. La Plata Electric Association is one of fourteen member associations in Colorado-Ute Electric Association, Inc. which generates and transmits power to its members. I am also a representative of the business community of Durango, including the Durango Area Chamber Resort Association, the Durango Industrial and Development Foundation and the Taxpayers for Water and Economic Development. I am here to request the full $7.8 million in funds to keep the Animas-La Plata Project on its construction schedule.

As a major service provider for southwest Colorado, La Plata Electric Association is a strong supporter of the Animas-La Plata Project. The Animas-La Plata Project will help stabilize electric rates. The Board of Directors of the Association studied the Project with care and at length and concluded that revenue growth in the Association's service area as a result of the Project will keep rates at near current levels without inflation for the foreseeable future. In addition, the electrical facilities associated with the Project will help improve the Association's system reliability since system upgrading is an integral component of the water delivery portion of the Project.

Further, the Animas-La Plata Project significantly enhances the sagging economy of southwest Colorado. The local business community solidly supports the Animas-La Plata Project. In advance of the December 8, 1987, election on the repayment contract between the Animas-La Plata Water Conservancy District and the Bureau of Reclamation, local business leaders organized "Taxpayers for Water & Economic Development." Over 40 business leaders actively participated in the local effort to secure the passage of the contract and raised over $60,000 in that effort. The group still meets to secure the construction of the Project so vital to our area's economy.

La Plata Electric Association must continue to support economic development in its service area in order to assure steady growth and a proven market. The value of many area homes has dropped in the past two years and raw land has lost value even faster. With the construction of the Animas-La Plata Project, area property values are projected to return to their previous levels. The Animas-La Plata Project will encourage diversification of the area economy. The availability of water is critical in attracting new industry as well as supporting current growth. The Project will increase tourism; for example, Ridges Basin Reservoir will be a four-mile long lake just outside Durango with fishing and camping facilities planned.

Obviously, the Project will create jobs during the twelve years of construction and, further, will provide for secondary jobs in farming and agriculture. The Project would provide as many as 1,054 jobs directly related to its construction and another 1,159 indirectly related jobs at its peak, which would come about 1997. Operation of the Project will require several full-time positions over the next several generations. The unemployment rate in the Four Corners area is among the highest in the state and job security offered by construction is one of the most attractive aspects of the Project.

The U.S. Bureau of Reclamation estimated that total income generated by Project construction would range from $375,000 the first year to more than $38 million in the tenth year. In all, the direct and indirect income would approach $170 million in new income over the twelve construction years.

The Project's economic impact during peak construction would exceed that of the state supported Fort Lewis College in Durango, one of the leading employers of the county. The Project's economic appeal is irresistible, particularly as it provides a means of escaping the typical boom or bust economic cycle which has plagued Durango since its early days.

Finally, as a Project proponent I am intensely aware that the Project provides the only readily available vehicle to satisfy the Indian reserved water rights claims. It should be noted that the residents of our service area appreciate the environment, the area's recreational opportunities and the security of small town life. By using our natural resources to create new jobs and improve our area's economy, we can preserve the lifestyle so important to our community.

I ask for your support for full funding the the Animas-La Plata Project. This Project is crucial to the economic development of our area.

Statement of Gerald R. Zimmerman, Executive Director, Upper Colorado River Commission

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Summary of Specific Action Requested

Appropriation of funds recommended by the representatives of the States of Colorado, New Mexico, Utah, and Wyoming for the Colorado River Storage Project and participating projects.

Mr. Chairman, the Upper Colorado River Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The member States of the Upper Colorado River Commission are: Colorado, New Mexico, Utah, and Wyoming. Since its inception, the Commission has actively participated in the development, utilization, and conservation of the water resources of the Colorado River Basin.

The member States of the Upper Colorado River Commission have always given strong support to water resources development in the Upper Colorado River Basin and in particular to the Colorado River Storage Project and participating projects. We who are interested in water resources development in the Basin appreciate the opportunity to provide testimony before this subcommittee in support of the appropriation of funds to continue the construction and operation of the Colorado River Storage Project and participating projects in Fiscal Year 1989.

Representatives of each of the Commission's member States will submit testimony to this subcommittee in support of specific appropriation requests that reflect the official position of each State with respect to the development of the water resource projects and programs in the Upper Colorado River Basin. Such specific requests will not be repeated here; however, they are fully supported by the Commission. You will note that the States' requested funding for the Fiscal Year 1989 ongoing program for the Colorado River Storage Project and participating projects is above that proposed in the President's Budget for the Bureau of Reclamation. Through these requested appropriations, water resource projects and programs within the Upper Colorado River Basin can be funded at a level that will benefit the local, regional, and national economies.

Specifically, the Upper Colorado River Commission requests an appropriation of $177.839 million for the Bureau of Reclamation's regular construction program. Of that amount, $7.8 million is for the Animas-La Plata Project in Colorado and New Mexico, $143.453 million is for the Bonneville Unit of the Central Utah Project in Utah, $.198 million is for the Dallas Creek Project in Colorado, and $26.388 million is for the Dolores Project in Colorado. A comparison of the funding levels contained in the President's Fiscal Year 1989 Budget and the amount being requested by the Commission is shown in the following table:

Project	President's Budget	Commission's Request
	(Thousand Dollars)	
Animas-La Plata Project	$ 1,981	$ 7,800
Bonneville Unit (CUP)	143,453	143,453
Dallas Creek Project	198	198
Dolores Project	26,388	26,388
	$172,020	$177,839

Funding levels contained in the President's Fiscal Year 1989 Budget for other activities associated with the Colorado River Storage Project and participating projects are fully supported by the Commission and include:

Activity	President's FY 1989 Budget (Thousand Dollars)
CRSP, Drainage and Minor Construction:	
Central Utah Project:	
Jensen Unit	$ 245
Modification/Addition to Completed Facilities	1,640
Total	$ 1,885
CRSP, Preconstruction Activity:	
Central Utah Project:	
Uintah Unit	$ 100
Total	$ 100
Seedskadee Project/Fontenelle Dam Rehabilitation	$ 2,500
Total	$ 2,500
CRSP, Section 8:	
Central Utah Project:	
Bonneville Unit	$ 8,000
Dolores Project	2,053
Dallas Creek Project	3,500
Seedskadee National Wildlife Refuge	3,447
Total	$17,000

The above level of appropriations is needed to ensure that the full benefits received from these projects will be attained in a timely manner.

In addition to the above-stated support for funding the Colorado River Storage Project and participating projects for Fiscal Year 1989, the Upper Colorado River Commission supports the development and implementation of the Colorado River Salinity Control Program described in Public Law 93-320, as amended. This salinity program, which authorizes both Title I and Title II projects, is designed to maintain salinity levels in the Colorado River system within established numeric criteria, is endorsed by the seven Colorado River Basin States and is essential to the overall development and management of the Colorado River Basin. Specifically, the Commission requests an appropriation of $20.027 million for the Bureau of Reclamation's Title I Colorado River Basin salinity control program and $24.05 million for the Title II program. A comparison of the amounts contained in the President's Budget and the funding level supported by the Upper Colorado River Commission for these programs is as follows:

Activity	President's FY 1989 Budget	Commission's Request
	(Thousand Dollars)	
Title I Program	$20,027	$20,027
Title II Plan Formulation	$ 1,185	$ 1,200
Title II Advance Planning		
(a) Uinta Basin Unit	$ 0	$ 500
(b) Lower Virgin River	0	300
Subtotal	$ 0	$ 800
Title II Construction		
(a) Grand Valley	$ 7,659	$ 9,000
(b) Paradox Valley	7,704	8,000
(c) Las Vegas Wash	0	50
(d) Lower Gunnison Winter Water	0	5,000
Subtotal	$15,363	$22,050
TOTAL Title II Program Funding	$16,548	$24,050
TOTAL Title I and Title II Program	$36,575	$44,077

A more detailed statement regarding the specific funding for the salinity program will be presented in the testimony of the Executive Director of the Colorado River Basin Salinity Control Forum as well as by representatives of the Colorado River Basin States.

Mr. Chairman, on behalf of the Upper Colorado River Commission, thank you for providing the Commission an opportunity to present this statement for the subcommittee's consideration.

Statement of John R. Fetcher, Secretary, Upper Yampa Water Conservancy District

The $2,000,000 appropriated by Congress in the 1988 budget gave the District the necessary impetus to get underway with construction this past summer.

Of the total project cost of - - - - - - - - - - - $17,583,000

The District is providing - - - - - - - - - - - - - 2,546,000

The State of Colorado has committed a 40 year 5% loan in the amount of - - - - - - - 8,000,000

The required Federal funding in the amount of - - 7,037,000 was approved as a combination loan and grant under the Small Reclamation Projects Act program by the Secretary of Interior on 28 April 1987

There remain $5,037,000 yet to be appropriated. Although the District has received the $2,000,000 and acquired temporary and high interest funding in order to start this year, the success of the project and its financial viability is dependent on the appropriation of this balance of $5,037,000 in the 1989 budget. Non-Federal funding is 60% of total cost.

The reservoir is crucial not only as a reliable supply of water for agriculture, municipalities, industry, and a small hydroelectric plant, but also as a site of a delightful recreation area which will stimulate expanding summer tourism, so necessary to our economy.

STATEMENT OF MICHAEL OCCHIATO, PUEBLO CITY (COLO.) CITY COUNCILMAN

Mr. Chairman and members of the Energy and Water Development Subcommittee, I am representing the Pueblo City Council and appearing before you today in support of the Administration's budget request of $2.7 million for continued funding for construction of the Fountain Creek Flood Control Project in Pueblo, Colorado.

Pueblo is the regional hub for Southeastern Colorado. Its location at the confluence of the Arkansas River and Fountain Creek has given the community tremendous geographical advantage, but conversely has made the community susceptible to the devastating effects of flooding from the Fountain Creek.

A major flood will result in: (1) damage or destruction to the homes of low-to-moderate income families on Pueblo's Lower East Side; and (2) damage to the City's Downtown Core, which includes many City, County and Federal buildings; and (3) paralysis of the community due to inundation of the City's major transportation corridors including Interstate 25, U. S. Highway 50, and the Fourth and Eighth Street bridges.

The lack of flood protection is also hindering economic development and construction in the downtown area due to the floodplain designation. This includes the proposed downtown hotel/convention center project.

The completed project will protect $34,509,000 in property and contents on Pueblo's East Side and $45,500,000 in property and contents in the Downtown Core.

We seek your support for the Administration's FY 1988 Funding request of $2.7 million, which will substantially complete the project. First funded for construction in FY 1987 at a level of $.3 million dollars, the project received continued construction funding of $2.5 million in FY 1988.

The Fountain Creek Flood Control Project is a cooperative effort combining the resources of the U. S. Army Corps of Engineers and the City of Pueblo.

The City is contributing 25 percent toward the cost of the flood control portion of the project. The successful sharing of costs between the City and the Federal Government should serve as a model for other communities.

This spring our community remains susceptible to this flood hazard. Until this project is completed, the community remains vulnerable to inundation, with potential threat to life and property.

Therefore, we urge the Subcommittee on Energy and Water Development to retain the Administration's requested budget of $2.7 for the continued construction of the Fountain Creek Flood Control Project.

PREPARED STATEMENT OF GOVERNOR CARRUTHERS OF NEW MEXICO

Senator JOHNSTON. We have also received a statement from the Governor of New Mexico, Gary Carruthers. Without objection, his statement will be made part of the record.

[The statement follows:]

STATEMENT OF GOV. GARREY CARRUTHERS OF NEW MEXICO

SUMMARY

This statement is submitted in support of appropriations for the construction and operation and maintenance of water resource projects authorized to be built by the Bureau of Reclamation and of appropriations for additional project investigations by the Bureau.

The President's fiscal year (FY) 1989 budget proposal for water resource projects of the Bureau of Reclamation in New Mexico and other states in which New Mexico has an interest should be increased for some projects to permit timely and efficient construction schedules and to provide measures to assure salinity control of the Colorado River. Specifically, I urge that the President's budget be increased for the following projects to the total amounts listed. I fully support the President's FY 1989 budget proposal for other Bureau of Reclamation projects of interest to New Mexico.

Animas-La Plata Project ---------- $7.8 million

Colorado River Basin Salinity
Control, Title II ---------- $24.050 million

Also, I urge that $250,000 be appropriated to the Bureau of Reclamation for advance planning on the Ute Water Development Project. This proposed project is a modified version of the Eastern New Mexico Water Supply Project. The Bureau completed a feasibility report for that project in 1972 and revised it in 1979.

STATEMENT

Colorado River Storage Project and Participating Projects

The Colorado River Storage Project Act, which became law in 1956, authorized a carefully planned and farsighted program for the development and use of waters of the Upper Colorado River Basin. To carry this program forward the President has recommended that $172.020 million be appropriated to the Bureau of Reclamation for FY 1989. That recommendation includes only $1.981 million for the Animas-La Plata Project in Colorado and New Mexico.

The Animas-La Plata Project, authorized for construction as a participating project in 1968, would provide municipal and industrial water supplies for communities in New Mexico and Colorado, irrigation water supplies for use in both states and a basis for settlement of the water rights claims of the two Ute Indian Tribes in Colorado.

Following intensive discussions and negotiations in 1985 and 1986, two significant agreements were reached in 1986 with respect to the construction of the Animas-La Plata Project. On June 30, 1986, a cost-sharing agreement was signed by the United States and the non-federal entities providing for construction of the Animas-La Plata Project and the sharing of the cost of that construction. On December 10, 1986, an Indian Water Rights Settlement Agreement was signed by the two Colorado Ute Indian Tribes, the State of Colorado and other affected entities in that state. With these two agreements consummated, the project has moved a significant step toward construction. This project has long been delayed and its construction should be implemented by

an appropriation of $7.8 million to the Bureau of Reclamation for FY 1989. I urge and support an increase in the FY 1989 budget to a total of $7.8 million for the Animas-La Plata Project.

I fully support the remainder of the President's FY 1989 budget proposal for the Colorado River Storage Project and participating projects.

Central Arizona Project

The Colorado River Basin Project Act, Public Law 90-537, enacted in 1968, authorized construction of the Central Arizona Project in Arizona and New Mexico. The President's FY 1989 budget proposes $180.389 million to continue construction of this project, all in Arizona. The Hooker Dam and Reservoir unit, or suitable alternative, in southwestern New Mexico is authorized for construction as a unit of the Central Arizona Project. I support the President's FY 1989 budget proposal for funding the Central Arizona Project.

Brantley Dam and Reservoir

The President's FY 1989 budget includes $5.785 million for continued construction on the Brantley Dam and Reservoir Project in New Mexico. The primary purpose of this project is to provide flood protection in the vicinity of the City of Carlsbad. Brantley Dam will replace the unsafe McMillan Dam which was reconstructed by the Reclamation Service in 1908, and will provide capacity for storage of flood waters. I support the President's FY 1989 budget proposal for this project.

Velarde Community Ditch Project

The President's FY 1989 budget includes $2.435 million for rehabilitation of deteriorated canal structures. I support the President's FY 1989 budget proposal for this project.

Colorado River Salinity Control Project, PL 93-320, Title I

The President's FY 1989 budget includes a total of $20.027 million for continued construction of the Yuma Desalting Plant and other salinity control facilities authorized to implement Minute 242 of the International Boundary and Water Commission. I support the President's FY 1989 budget proposal for this program.

Colorado River Basin Salinity Control, PL 93-320, Title II and Colorado River Water Quality Improvement Program

The President's FY 1989 budget includes only $15.363 million for construction of two salinity alleviation units authorized by Title II of Public Law 93-320, the Grand Valley and Paradox Valley units in Colorado. The President's budget does not include any funds for construction of two authorized units, Lower Gunnison Winter Water in Colorado and Las Vegas Wash in Nevada.

The Colorado River Basin Salinity Control Forum, comprised of representatives of the seven Colorado River Basin states, has carefully reexamined all of the features needed to control the salinity of the Colorado River and has concluded that the President's budget is not adequate to ensure that further pollution and degradation of the water quality of the Colorado River does not occur. The Forum has concluded that a total of $22.050 million in construction funding for the four authorized units noted above, an increase of $6.687 million over the President's budget for FY 1989, is essential to maintain adequate levels of salinity control. I support an increase of $6.687 million in the

President's FY 1989 budget to a total of $22.050 million for construction of Colorado River Salinity Control, Title II, features.

The President's FY 1989 budget does not include advance planning funds for the Uinta Basin and Lower Virgin River Units in Utah. The Forum supports appropriations in the amount of $500,000 for advanced planning of the Uinta Basin Unit and $300,000 for the Lower Virgin River Unit, and I concur.

Closed Basin Division, San Luis Valley Project, Colorado

The President's FY 1989 budget includes $10.321 million for continued construction of the Closed Basin Division. Work will include completion of the supervisory control system, San Luis Lake Pumping Plant and Phases II and IV of the electrical transmission system. I fully support the President's FY 1989 budget in the amount of $10.321 million for this project.

General Investigations

The President's budget for FY 1989 does not include funds for general investigations on the proposed Ute Water Development Project in eastern New Mexico. This project is a modified version of the Eastern New Mexico Water Supply Project on which the Bureau of Reclamation completed a feasibility report in 1972, which was partially revised in 1979. The 1972 report was on a project that would have provided Ute Reservoir water to nine communities in Eastern New Mexico. Because of high unit costs, several of the communities declined participation in the proposed project. Under its Technical Assistance to the States program, the Bureau has undertaken study of a concept called the Ute Water Development Project to include only communities situated closer to Ute Reservoir and Cannon Air Force Base. The cities of Tucumcari and Clovis have entered option contracts to purchase 18,400 acre-feet of Ute Reservoir water annually that would be provided to all of the entities in the project. All of the entities involved have entered a joint powers agreement and formed the Ute Reservoir Water Commission to pursue the project. I urge that at least $250,000 be added to the President's FY 1989 budget for the Bureau of Reclamation for advance planning on the Ute Water Development Project.

Operation and Maintenance Program

I support the President's FY 1989 budget for operation and maintenance for the following Bureau projects in New Mexico and in adjacent states in which New Mexico has an interest; 1) Carlsbad Project, $61,000; 2) Brantley Project, $255,000; 3) Pecos River Basin Water Salvage, $300,000; 4) Rio Grande Project, $3,993,000; 5) Middle Rio Grande Project, $10,546,000; and 6) San Luis Valley Project, $1,736,000; a total of $16.891 million.

The opportunity to present this statement in support of appropriations for the Bureau of Reclamation is sincerely appreciated.

STATEMENT OF HON. RICHARD C. SHELBY, U.S. SENATOR FROM ALABAMA

Senator JOHNSTON. Next we go to the great state of Alabama that has the good fortune to be represented by my good friend, Senator Shelby, who is on top of these water projects like a water bug on top of the water.

I would like to say Senator Heflin is on the water like a water bug, but I am afraid he would sink. [Laughter.]

However, he was here earlier, but I am delighted.

I don't have to introduce Senator Shelby to the citizens of Alabama, but let me just tell you you are lucky to have him and he is an awfully effective member of the U.S. Senate.

Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman, I appreciate the opportunity to appear before your committee. I have been here before, even when I was in the U.S. House before I was elected to the Senate, and I know that you are familiar, as well as your committee, with the Alabama problem with the Warrior-Tombigbee Waterway and the Coosa-Alabama River system.

I have two written statements that I would like to submit for the record, Mr. Chairman, if you would permit me, in their totality.

As you probably know, Mr. Chairman, there are some distinguished people here in this room from Alabama, some of them are promoting the Coosa-Alabama River improvement, others that are promoting the Warrior-Tombigbee development, and some promoting both like I am.

You have been a friend, Mr. Chairman, of the development of the waterways, not only in the South—your State of Louisiana, my State of Alabama—but all over the country, and I believe that we have to continue to do that and I believe that it is cost-effective.

We are in a budget squeeze here, no one knows this better than you. You chair this powerful and very important committee that has to do with dealing out the money, and you are going to have less to deal out, but this will be cost-effective.

I appreciate the chance to come before your committee and appeal to you, as I have in the past, to continue funding these water projects, Mr. Chairman.

Senator JOHNSTON. Thank you very much, Senator Shelby. I am sure you and I are going to be working together on these matters as we have in the past.

[The statements follow:]

STATEMENT OF SENATOR RICHARD SHELBY

WARRIOR-TOMBIGBEE WATERWAY SYSTEM

Mr. Chairman, I appreciate the opportunity to appear before you today on behalf of Alabama's Warrior-Tombigbee Waterway System.

Efficient and reliable transportation of freight on our nation's land and intracoastal waterways is of vital importance to America's economy. The growing reliability of barge transportation, which is ideally suited to high-tonnage shipments of bulk commodities and fuels, is only one facet of the Waterway's importance.

Several thousand farmers from more than twenty Alabama and Mississippi counties ship their grain via the waterway to the Port of Mobile for export. Other commodities moving through the Warrior-Tombigbee include coal, steel, wood products and various ores, crude and fuel oils, chemicals and aggregates. Thousands of Alabama jobs are provided in the mining, manufacturing, processing, construction and farming enterprises which are so heavily dependent upon Waterway transportation.

The FY 1989 operations and maintenance budget request made by the rps of Engineers for the Warrior-Tombigbee Waterway is $12.8 million. This amount should cover minimum day-to-day operations, but would not support an on-going program to correct long-standing deficiencies. For example, there have been incremental actions for several years which are designed to increase the efficiency of dredge material disposal and reduce recurring shoaling. Without additional funds, these activities would have to be deferred or possibly terminated. Orderly continuation of these projects is essential to ensure the efficiency and reliability of the waterway. I ask your consideration of an additional capability funding request, which will be made by the Corps of Engineers when the appropriate amount is determined.

A second appropriation item for FY 1989 is for new construction. The rps has requested $15.5 million for construction of the new Oliver Lock. This amount will support the orderly and timely continuation of contracts and the accompanying work to replace this last substandard lock on the Waterway. Approval of the full $15.5 million is essential as this amount will be matched with $15.5 million from the Inland Waterways Trust Fund to provide the total $31 million required for FY '89.

Finally, I would like to offer my support for the Corps' budget requests for operations and management and construction funds to continue the deepening project at Mobile Harbor.

I thank you, Mr. Chairman, for this opportunity to appear before this distinguished committee on behalf of the Warrior-Tombigbee Waterway System. The Waterway is of utmost economic value to Alabama and is rapidly gaining status in the eyes of the rest of the nation. I urge this committee to continue, at the fullest possible extent, funding for the Warrior-Tombigbee Waterway project.

COOSA-ALABAMA RIVER SYSTEM

Mr. Chairman, I appreciate this opportunity to appear before you today on behalf of the Coosa-Alabama River System.

The Coosa-Alabama River Improvement Association has requested $33,259,000 in fiscal year 1989 operation and maintenance funds for upkeep and improvement of the system. This request will allow the following: (1) resumption of design and engineering work on the Coosa Project, which was suspended in 1983; (2) continued rehabilitation and added construction of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne; (3) continued federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery; (4) continued operation and maintenance of the upstream reservoirs and hydropower plants at Allatoona and Carters Lake in Georgia; and (5) maintenance of the schedule for the Mobile Harbor Deepening Project.

The Alabama-Coosa Waterway project is a solid investment in future productivity and economic progress, and is a project to which I pledge my continued full support. The economic benefits and possibilities cannot be underestimated.

I thank you, Mr. Chairman, for this opportunity to appear before this distinguished committee on behalf of the Coosa-Alabama River System. I urge you to continue, to the fullest possible extent, funding for the project.

APALACHICOLA-CHATTAHOOCHEE-FLINT WATERWAY

Mr. Chairman, I appreciate this opportunity to present testimony to your distinguished subcommittee on behalf of the Apalachicola-Chattahoochee-Flint Waterway.

The Tri-Rivers Waterway Development Association has requested $4,574,000 in fiscal year 1989 for the continued operation and maintenance of the Apalachicola-Chattahoochee-Flint Waterway. This is the same amount contained in the President's FY 1989 budget, and I urge your continued support of this vital system.

The Tri-Rivers Waterway Development Association has worked diligently toward the effective development, utilization and maintenance of the ACF River System for commercial navigation. In addition, the Association maintains interest in flood control, power generation, water supply, low flow augmentation, recreation and wildlife enhancement.

Mr. Chairman, I again ask your continued support of the Apalachicola-Chattahoochee-Flint Waterway System.

ADDITIONAL STATEMENTS FROM MEMBERS OF CONGRESS

Senator JOHNSTON. Before calling the first Alabama group, I want placed in the record statements we have received from Congressmen Sonny Callahan, Ronnie Flippo, and Ben Erdreich of Alabama, Congressman Bill Natcher of Kentucky, and Congresswoman Marilyn Lloyd of Tennessee.

[The statements follow:]

STATEMENT OF REPRESENTATIVE SONNY CALLAHAN OF ALABAMA

TENNESSEE-TOMBIGBEE WATERWAY

Mr. Chairman, it is an honor to come before you to add my enthusiastic support to the Tennessee-Tombigbee Waterway funding request for fiscal year 1989.

Construction of the Tenn-Tom is now complete and traffic is moving on the entire system. Because the waterway opened ahead of schedule and because of shippers' economic problems, commerce on the system was lower than expected in its first year. However, shipments more than doubled in 1986, the second year of operation. Competition from the Tenn-Tom has helped to lower rail rates significantly. Low transportation costs have generated over $300 million in new industries and created over 1100 new jobs. Some of the major commodities using the Tenn-Tom include coal, agricultural products, metals, petroleum products, and paper products. Shipments of wood products and chemicals have exceeded expectations.

Fifteen ports, both public and private, have been built along the Tenn-Tom and more are in the planning stages. Recreational usage on the waterway's lakes and canal has been very heavy. An estimated 4 million visitors used these facilities in fiscal year 1986.

We have invested dearly in the project and must assure its adequate maintenance to protect that investment by allowing efficient commodity movement. The operation and maintenance funding level requested in fiscal year 1989 is $17.939 million, but I hope the committee will approve the Corps of Engineers' full capability for the project.

I appreciate having the chance to express my interest in the needs of the Tennessee-Tombigbee Waterway.

COOSA-ALABAMA WATERWAY

Mr. Chairman, members of the subcommittee, I am happy to have this opportunity to express my support for the fiscal year 1989 appropriation request for the Coosa-Alabama River System.

For operation and maintenance along the system, $2.381 million has been requested in FY 1989 for the Alabama-Coosa River, but I urge approval of the full capability for this project. I also support the full O&M capability for the following projects: Millers Ferry Lock and Dam, Robert F. Henry Lock and Dam, Allatoona Lake in Georgia, and Carters Lake in Georgia. The Corps of Engineers' full capability is necessary to ensure proper maintenance of the river system. Without adequate maintenance, the river will not achieve maximum efficiency and navigation will be impeded. Operation and maintenance work on the Alabama River will keep hydro power plants in good condition and will allow dredging and routine maintenance work to continue to provide us with the most energy-efficient means of transportation. If we do not provide adequate funds for dredging, snagging, spoils disposal, repair of public facilities, and other important maintenance work, we will only have more costly repair bills in the future.

There continues to be great interest in the Coosa River Navigation Project, and the Corps of Engineers is preparing a Record of Decision on the project. In anticipation of that report, $1,000,000 was appropriated last year to study the navigation project.

Mr. Chairman, I appreciate having had this opportunity to voice my strong support for the Coosa-Alabama River System. Thank you for your consideration of my request.

WARRIOR-TOMBIGBEE WATERWAY

Mr. Chairman, I am pleased to be here to voice my support for fiscal year 1989 funding for the projects included in the Warrior-Tombigbee Waterway system.

The Warrior-Tombigbee Waterway is an extremely successful water transportation system. Some 80 percent of the Port of Mobile's coal traffic travels on the waterway. Over 5 million tons of coal move on the system to electric generating plants. Grain from 21 counties in Alabama and Mississippi is shipped to Mobile on the waterway. It also provides substantial movement for commodities such as ore, steel, forest products, petroleum, and chemicals.

The President has requested $12.836 million for operation and maintenance on the Warrior-Tombigbee Waterway System for fiscal year 1989. I believe that adequate operation and maintenance is crucial, and I hope you will approve the Corps' full capability for this project.

The locks and dams on this system have been modernized, except for the William Bacon Oliver Lock and Dam. This facility is obsolete and is a bottleneck. The Administration's 1989 budget request includes $15.5 million in construction funding for the Oliver Lock and Dam, with another $15.5 million to be funded by the Inland Waterways Trust Fund, for a total of $31 million. I hope this subcommittee will approve this level of construction funding for the Oliver Lock and Dam.

The President's budget also requests $50,000 for port development on the Tombigbee River in the vicinity of Jackson, Alabama. I strongly support that recommendation. The Corps of

Engineers is currently studying several options to accomplish badly-needed navigation improvements in the area and to accommodate a port. Hopefully, the Corps will develop a plan to satisfy all interests.

Thank you, Mr. Chairman, for permitting me to testify in support of the Warrior-Tombigbee Waterway and for your consideration of its needs.

MOBILE BAY AREA PROJECTS

Mr. Chairman, I am pleased to be able to submit my request for fiscal year 1989 funding for projects in the Mobile Bay area.

I am deeply grateful for this subcommittee's assistance in recent years to authorize and fund deepening of the Mobile Harbor channel. The State of Alabama is committed to the Harbor deepening project, and it is encouraging that the Administration has requested $9.685 million in construction funds for the project in FY 1989. I urge the subcommittee to approve that request so that we can move ahead with this critical work. In the meantime, it is imperative that we continue to provide adequate operation and maintenance in Mobile Harbor. $4,774,000 has been requested for that purpose, but I urge the subcommittee to fund the Corps of Engineers' full capability for maintenance dredging.

The flood control project for Three Mile Creek in Mobile is vitally important to our community and should be fully funded. The Administration has requested $4.5 million for construction of the flood control project, and I hope you will see fit to approve that full amount.

The Corps of Engineers has been studying the feasibility of deepening the Bayou La Batre Channel for several years. Thanks

to this committee, that study has been fully funded and the project found feasible. The coastal area of Alabama has experienced a great deal of oil and gas exploration activity and this increased activity has further pointed to the need for this channel improvement. Preconstruction, engineering and design funding of $200,000 has been requested for this project, and I urge your support of this request.

The Water Resources Act of 1986 authorized a program for mitigation of losses associated with the Tennessee-Tombigbee Waterway. I very strongly support that program which prohibits taking of property from unwilling sellers. In Alabama, property would be acquired in the Mobile-Tensaw delta area and would be managed by the State of Alabama. 18,000 acres are currently available in the delta from willing sellers, and local sportsmen are very enthusiastic about protecting the delta. I request that $10 million be appropriated in fiscal year 1989 to purchase land in Alabama and Mississippi.

Most of our needs in the Mobile area have to do with vital ongoing maintenance activities. Our major industries, as well as commerce from other areas of the nation, are dependent on an efficient waterway system for the transportation of various commodities. Commercial and recreational fishermen depend on having access to fishing areas in authorized channels in Mobile Bay and the Gulf, and they depend on having reliable access to safe harbors. These are just a few of the reasons why maintenance activities are so important. I urge the committee's consideration of the Corps' full operation and maintenance capabilities on these projects: Gulf Intracoastal Waterway, Dog and Fowl Rivers, Perdido Pass, Dauphin Island Bay, Bayou Coden, Fly Creek, and Bayou La Batre.

Thank you again, Mr. Chairman, for allowing me to testify in support of these important projects.

STATEMENT OF REPRESENTATIVE RONNIE G. FLIPPO OF ALABAMA

Mr. Chairman, distinguished Members of the Committee. I want to thank you for this opportunity to offer my comments on the importance of the Warrior-Tombigbee Waterway to our nation's economic well-being.

It is important to focus attention on the benefits of the Federal commitment to an efficient and cost-effective waterway system. The Warrior-Tombigbee Waterway is a prime example of the gains to be made from the investment of Federal funds in our nation's basic transportation infrastructure. This waterway continues to play a key role in stimulating economic growth throughout the region.

The Warrior-Tombigbee Waterway acts as an engine for new industrial output by ensuring access to needed resources and by providing a efficient and cost-effective means of transporting finished goods to the Port of Mobile for export to overseas markets. The waterway acts as a vital conduit for shipments of American coal, agricultural products, and other primary resources, which are key elements of any effort to expand our nation's export markets.

Each Member of Congress knows how important it is to maintain and improve our nation's ability to compete in the global economy. The Warrior-Tombigbee Waterway, together with the Port of Mobile, is an integral part of the overall U.S. waterway system, and this system clearly constitutes an American competitive advantage which deserves the full support of Congress.

The Federal commitment to the Warrior-Tombigbee Waterway is already paying substantial dividends by spurring on private and non-Federal governmental investment in new industrial facilities and the more active development of resources for export expansion. For example, the Alabama State Docks, as a result of a recently completed $250 million expansion program, now offers the most advanced coal handling technology available in this country, along

with similar improvements for grain handling and bulk materials. Today's traffic and ever increasing demands require that the Waterway operate at peak efficiency on a full-time basis. There is clearly abundant reason for the Federal Government to follow through on its investment in an efficient and cost-effective waterway system.

In closing, I want to commend the members of this committee for your dedication to America's waterway system. You each have a special understanding of the important contribution the Warrior-Tombigbee Waterway makes to our nation's economic progress. The the need is clear for continuing the federal commitment to waterway improvements in the Warrior-Tombigbee and at the Oliver Lock. I urge your support for the FY 1989 appropriations request for the Warrior-Tombigbee Waterway, and hope that you will consider additional funding levels as necessary to complete the important work being undertaken on the Warrior-Tombigbee.

STATEMENT OF REPRESENTATIVE MARILYN LLOYD OF TENNESSEE

Mr. Chairman, I want to thank you and my friend, Sen. Jim Sasser, for allowing me this opportunity to address the Subcommittee on a matter very close to me, the Tennessee Valley Authority (TVA).

I represent the Third Congressional District in Tennessee which includes Chattanooga and Oak Ridge; there are seven counties in my District. To show you how important TVA is in my District, I'd like to list a few facts. We have between 8500 and 10,000 employees out of a total TVA workforce of about 34,000. Nearly one-third of all TVA employees work in the Third District. We also have a large number of major TVA facilities in our area: Norris Dam, Melton Hill Dam, Nickajack Dam, Chickamauga Dam; Sequoyah Nuclear Plant, Sequoyah Nuclear Training Center; Bull Run Steam Plant, Kingston Steam Plant; Raccoon Mountain Pumped Storage Facility; the TVA Chattanooga Office Complex, the Load Control Center, and the Central Laboratories. In 1986, TVA estimated that its annual payroll for its employees in my District totaled more than $260 million.

Gentlemen, I suggest that there are very few, if any, who have more interest in TVA's activities than I do. As you can see, it is practically the lifeblood of my District. I would also point out that these jobs are not all power jobs; there are numerous non-power activities throughout the District as well.

I serve as the Chairman of the informal Tennessee Valley Congressional Caucus, which is comprised of all Representatives from the TVA service area and the Senators from the seven states served by TVA. The Caucus is planning a hearing next month on the proposed organizational restructuring and system-wide cutbacks announced by Chairman Marvin Runyon recently.

I recognize that today's hearing is a routine part of the annual budget process, but it is also the first time Mr. Runyon has addressed either House or Senate since his announcement. Doubtless, Sen. Sasser has heard from his constituents who are employed by TVA, I certainly have.

You can't miss the dual concern expressed by the TVA employees. Naturally, they are upset at this upheaval, and they are worried and uncertain of the future. But in spite of the outlook at this point, these men and women are loyal to TVA, and they understand that the problems within the agency -- all of them -- must be addressed. These men and women are the heart and soul of TVA. They have given the agency and the Valley years of service. And true to the high caliber of personnel at TVA, they have suggestions for solutions which should not be overlooked or swept aside. Their commitment to the agency is as strong as their commitment to themselves.

In the process of this hearing, I would hope that a number of issues will be discussed pertaining to this course of action. We are dealing with peoples' jobs, their livelihoods. One week after Mr. Runyon made his announcement to his employees, the local headlines touted his call for lifting the pay cap. I found that to be most insensitive. Those of us who represent the Valley understand that the federal pay cap is a problem. But to call for its elimination a scant week after telling all employees that substantial layoffs were coming to curb costs was a slap in the face to thousands of dedicated employees.

Along the same lines, people are beginning to write my office saying, "Evidence is surfacing that TVA management intends to keep the expensive contractors and sacrifice TVA workers across the board." This warrants explanation and discussion.

As is always the case in such incidents, the rumor mills are flourishing. I am very concerned about those individuals who would be hit the hardest: the families that have only one source of income; the families whose primary and largest contribution to family income is the TVA job; and those families that are threatened with total upheaval through relocation; children who must leave their friends; spouses who have jobs and careers which must be sacrificed.

We can discuss and debate the need for this action. We here in Washington can sympathize with those affected. We can talk about reducing costs. We can talk about cutting expenses. But the bottom line here is not an abstract. We are discussing more than just jobs, more than just layoffs; we are discussing peoples' LIVES. And we must find alternatives.

I would hope that Mr. Runyon will outline a time frame. Thousands of displaced workers can wreak havoc on a community. As I understand it, these cuts must be in place by October 1 -- with more to come next fiscal year. I suggest that we pursue a way to do this over a longer period of time to help the individuals, the families, and the communities.

I would ask Mr. Runyon and the Board when they make their final plans known to also make known those alternatives which they discussed but did not select. We must know, and TVA employees deserve to know, what other options were rejected and why.

I think we all recognize that strong medicine is needed to get TVA back to the forefront of the industry. But the only way to achieve true progress is through the compassionate treatment of all its employees, especially those who may be involuntarily unemployed. We have all read the newspapers, seen the six o'clock news. But all too soon, we are going to see the impact when our neighbors, our friends and our relatives become the victims of circumstance.

STATEMENT OF REPRESENTATIVE BEN ERDREICH OF ALABAMA

Re: Village Creek Flood Control Project, Birmingham

Chairman Bennett and Subcommittee members, I am grateful for the opportunity to submit a statement for the record of my strong support for funding for the Village Creek flood control project in Birmingham, Alabama.

The Corps of Engineers budget contains $3.8 million for FY 89 land acquisition costs. The City of Birmingham as sponsor for the project is working well with the Corps, and the project is progressing on schedule.

The project is important to neighborhoods in and surrounding Birmingham to alleviate the damages to homes and businesses and the threats to lives and safety that the flooding causes. In addition, the City of Birmingham needs relief from the flooding of Village Creek in order to complete plans to modernize the Birmingham Municipal Airport. Flooding damage at the airport has become increasingly severe.

Village Creek flooding accounts for over $2 million in damages each year. With the channel modification and relocation of some residences, the project will provide benefits in excess of costs. I urge this Subcommittee, which has been so helpful with this project, to act again to ensure that the work on Village Creek can go forward.

Re: Budget Request of Warrior-Tombigbee Development Association

Mr. Chairman, I am grateful for the opportunity to submit remarks in support of the budget request of the Corps of Engineers for the Warrior and Tombigbee rivers. I join Mr. Offa Nichols in support of improving the efficiency and reliability of Warrior-Tombigbee navigation. The Association's efforts are vital to local, national and international trade through the continued efficiency and modernization of the waterway.

Above the requested $12.8 million for operations and maintenance, the Corps of Engineers has requested an additional funding capability to cover the costs of making various channel improvements. I would urge that additional money be appropriated to permit the orderly continuation of on-going channel projects and future reduction of maintenance costs. The Association has worked hard to stretch its dollars, however, it is getting more difficult for them to internally cover the costs of these extra projects.

I would also like to express my support for the approval of the full $15.5 million for the Oliver Lock. This amount will support the continuation of contracts and the accompanying work to replace the one remaining substandard lock on the Waterway. With the completion of this lock, the Waterway will have a system of modern and standard-sized locks throughout its length.

Mr. Chairman, it is a pleasure to work with the capable and professional people at the Warrior-Tombigbee Development Association, and I have every confidence that they will continue their good work of promoting the waterway and seeing that it remains an economic asset.

Re: Valley Creek Flood Control Study, Jefferson County, Alabama

Chairman Bennett, Subcommittee members and colleagues, I am grateful for this opportunity to submit this statement for the record in support of continued funding for the Valley Creek Flood Control studies.

The Corps of Engineers has requested $190,000 for the study on Valley Creek for FY 89. The Corps has been very helpful in working with the municipalities and the Jefferson County Commission to set out cost-sharing requirements. The people of western Jefferson County are committed to this project, and are willing to cooperate in any way possible.

The Corps has identified what it feels is a feasible project to control the flooding along Valley Creek, but notes that some technical obstacles need to be overcome. It is important that this project not stall during this important study process. Mr. Chairman, I am grateful for the help you and your Subcommittee have provided the people of Jefferson County and thank you for allowing me to submit these remarks.

STATEMENT OF REPRESENTATIVE WILLIAM H. NATCHER OF KENTUCKY

Mr. Chairman, we want you to know that we appreciate the opportunity to appear at this time on behalf of the projects in Kentucky.

As you have heard me say on many occasions, Kentucky has more miles of navigable streams than any other state in our country with the exception of one, and all down through the yers, we have suffered damages from floods and loss of lives.

Mr. Chairman, I respectfully request that the projects and funding set forth in the budget for fiscal year 1989 for Kentucky be approved.

I join with all of my colleagues from Kentucky in the House and in the Senate in their requests for our state and their districts.

Again, Mr. Chairman, I want to thank you and the members of your committee for permitting us to appear at this time in behalf of the Kentucky projects.

WARRIOR-TOMBIGBEE WATERWAY AND PORT OF MOBILE, ALA.

STATEMENT OF OFFA S. NICHOLS, JR., PRESIDENT, WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

ACCOMPANIED BY:

SHELDON MORGAN, CHAIRMAN

JOHN MIXON, GENERAL MANAGER, WARRIOR & GULF NAVIGATION CO.

WALTER B. STEVENSON, JR., ADECA, ALABAMA

Senator JOHNSTON. Next, we have Offa Nichols, who is the president of the Warrior-Tombigbee Development Association.

It is good to see you again.

Mr. NICHOLS. With me at the table is Sheldon Morgan, on my left, chairman of the Warrior-Tombigbee Development Association; on his left is John Mixon who represents the vice chairman; and on my right is Walt Stevenson representing the Governor of the state of Alabama.

I will be brief, Senator, and to continue on Senator Shelby's line, this Warrior-Tombigbee system is a very cost-effective system.

First, it is an old system which has seen traffic since the turn of the century. After World War II, it was very, very deteriorated and run-down. It had locks that went back to 1915.

Through the intercession of the Congress, a project was put together that since that time has produced five new locks and dams replacing all of the older locks and dams.

Projections at the time those appropriations were made were that the system would carry, by 1980, 8 million tons of traffic which would pay back the federal investment involved. That 8 million tons of traffic came by 1966, in 1980 there was almost 17 million tons of traffic, and by 1984 some 20 million tons were reached on the Warrior-Tombigbee system, part of which is being taken care of by the new lock, the lock which was taken care of in the new law, the law which was passed in 1986.

We are very proud of the fact that that lock is leading the way, the preliminary work is all complete and the contractor will actually build the lock and dam by the first of June. So, part of the money that we are asking for, which is in the President's budget, is for the continuation of the Oliver Lock project in the proper schedule.

There are some other problems that have come because the traffic has grown as it has so much faster than it was anticipated, and because Mother Nature visits us with flooding periodically.

Because your requested budget for Alabama is some $12.8 million, we will only do routine activity on the system. They will not continue a number of project—the design of which goes back to 1980–81 following the unprecedented floodings in 1979 and 1980. The Corps has not been able to tell me what the need in relation to keeping ahead of these floods for this year, but based on that and from working very closely with them, we have inserted in our future request an additional $7 million as additional capability required to continue these projects on the Warrior-Tombigbee system.

We think it is a system that has demonstrated that we know how to handle the numbers that have been provided from the federal side, from the builders of that as well as from private investment, and we think that those will continue and we solicit your continued support.

[The statement follows:]

STATEMENT OF OFFA S. NICHOLS, JR., PRESIDENT, WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

SUMMARY OF THE REQUEST

The following is a summary of the funding items for the U.S. Army Corps of Engineers for FY89 which bear on the needs of the Warrior-Tombigbee Waterway, and which we ask the Committee to approve:

Warrior-Tombigbee Waterway

Operations & Maintenance Funds included in Corps' Budget Request	$12,836,000.
Funds for Additional Capability for O&M, not included in Corps' Budget Request	7,000,000.
Total O&M Funds Required	$19,836,000.
Funds for New Construction, included in Corps' Budget Request - Oliver Lock	$31,000,000.
- Jackson Port	50,000.
Total New Construction Funds Required	$31,050,000.

Other needs allied to the Warrior-Tombigbee are:

Mobile Harbor

Operations & Maintenance Funds, included in Corps' Budget Request	$4,774,000.
Funds for New Construction, included in Corps' Budget request	9,885,000.

We wish to highlight the item identified above as "Additional Capability." Since funds for this item were not included in the Corps' Budget Request, it is not clear to us whether the Committee has been informed of the essentiality of funding for certain of these Additional Capabilities. We emphasize the need for additional O&M Capability funds if we are to have an adequate current year program, and to support on-going projects designed to improve safety and efficiency, and to reduce future costs. Additional funds are critical to the future of this waterway.

Written statements of support are attached.

I am Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. Our members represent a broad cross-section of shippers, carriers and the general business community in the Warrior-Tombigbee basin in Alabama, and eight other states. The Association began in 1949 to work for the redevelopment of the Warrior-Tombigbee Waterway System. Construction of the original 17 locks and dams began in the late 1870's and was completed in 1915. The navigation system provided by these locks and dams had gradually

deteriorated, and following World War II the annual tonnage had levelled off at 2.5 million tons due to the condition and limited capacity of the obsolete locks.

The Association's objectives have been not only the replacement of the outmoded locks and dams and improvements in the Port of Mobile area, but also the appropriation of sufficient O&M funds to support efficient and reliable navigation. Congress has generally appropriated the necessary funds to support these objectives. There are now only six (6) locks in the 400-plus miles from the head of navigation, located northwest of Birmingham, to the Port of Mobile. During the studies which resulted in this redevelopment, it was projected that by 1980 the Waterway would carry some 8 million tons annually. These levels were reached in 1966, and by 1980 twice the projected tonnage was being moved on the Waterway. Traffic has since reached a peak of 19.6 million tons.

With the completion of the new William Bacon Oliver Lock in 1991, the Warrior-Tombigbee Waterway will have a system of modern and standard-sized locks throughout its length. Together with the other five locks opened between 1954 and 1975, this system represents a noteworthy example of the positive impact of the water resource development program. The most persuasive evidence of the validity of this project and the wisdom of those who made it possible comes from the record. This record shows that, since the modernization of the Warrior-Tombigbee Waterway began, traffic has increased from just over two million tons annually to almost 20 million tons. That growth took place notwithstanding the leveling off of coal exports and the general weakness in the markets of other traditional major waterway users in the recent past.

During this decade, due in large part to the modernization of this waterway, several billion dollars have been invested by industry, farmers and other non-Federal governmental agencies, providing thousands of jobs. The Alabama State Docks', as a result of a recently completed $250 million expansion program, now offers the most advanced coal handling technology available in this country, along with similar improvements for grain handling and bulk materials. It is interesting to note that the investment by this one local agency exceeds the later Federal investment in building all the locks and dams on the entire waterway, including the new Oliver Lock. Now even more expansion is underway to handle increased shipments of forrest products as well as iron and steel products. We are asking for the continuation of Federal investments which pay off many fold.

Today's traffic and ever increasing demands require that the Waterway operate at peak efficiency on a full-time basis. Shipments of ore, steel and related products are expected to increase substantially because of the new and modern manufacturing facilities at U.S. Steel. Annual tonnages in the 3-4 million ton range are forecast, beginning later this year. The continued efficiency and modernization of the waterway were important in U.S. Steel's recent decision on even further modernization of their Fairfield facilities -- clearly a major factor in the survival of Fairfield as a viable facility. This brings U.S. Steel's investments during this decade to about $1 billion. A new $100 million mini-mill has been built near Tuscaloosa - the first such new facility to be built in this country in 19 years. Output is already nearly 50% ahead of forecasts. Major mining interests and marine equipment and facilities account for another $1 billion in investment. The efficiency and reliability of the waterway will be significant factors in the competitiveness of these new facilities. Thousands of jobs hang in the balance. We believe we are priviledged to have ringside seats at the re-birth of the steel industry in this region.

There are other commodities moving on the waterway, such as other ores, crude and fuel oils, other steel products, chemicals, aggregates and now, by substantial increased tonnages of wood products. Related industries, though still impacted by the competitive international markets, have plans to grow and modernize.

These are but examples of how this waterway is so central to the economy of this entire area, impacting both domestic and international markets. Attached with this statement are letters further highlighting this importance. I hope you will note the wide range of interests represented by these statements. Included are financial institutions; public utilities; both deep water and inland port facilities, representing both public and private ownership; coal mining, both deep and surface; manufacturers; agri-business; suppliers; constructors; and, of course, marine interests. These represent a broad cross-section of the economic heartbeat of an entire region. Throughout these statements you will find repeated references to the importance of confidence in the waterway to the willingness of business and industry to continue to invest in our area. A statement by William Carr, President of Jim Walter Resources Mining Division, perhaps best typifies these thoughts. He said,

> "The world coal business is at its most competitive level in history. News of any problems, especially transportation and delivery problems, is quickly spread by other coal producers around the world to the buyers to discourage purchases here. A blemish on our delivery record can have devastating, long-term effects from which we might never fully recover. Buyers lost today may never return tomorrow."

With respect to the actual funding needs, we support the Corps' request for O&M funds for the Warrior-Tombigbee. However, the requested level of funding, $12.8 million, will not support the kind of O&M program essential to keeping the system reliable and efficient. The funding requested represents less than the average requirement over the past several years for day-to-day operations, and would be unlikely to support normal and efficient operations during FY89. These funds will not permit the continuation of on-going programs designed to correct deficiencies of long standing, and to handle the increased traffic on an efficient, long-term basis. Work is being done to reduce sedimentation and shoaling, which will reduce O&M costs in future years. Non-structural measures are underway which will increase efficiency and traffic flow through several reaches of the Waterway, thereby enhancing its ability to handle the much greater traffic than had been anticipated. These measures result from studies conducted following the unprecedented and destructive flooding in 1979 and 1980. They are part of the intermediate range actions subsequently approved to deal with the impact of these conditions, and to ameliorate the recurring effects encountered during all but ideal flow conditions. To stop or significantly delay these projects would be a severe blow to the current efficiency and reliability of the channel, and even worse on its future. At the time of the preparation of this statement, the Corps had not released the approved "additional capability" figures, and based on recent experience, when the figure is released, it will probably not be adequate. However, based on a close following of these projects and the associated general cost forecasts, the additional need for FY89 is in excess of $7.0 million.

We support the New Construction funds as indicated in the Corps' request. These funds will support the orderly continuation of the construction of the new Oliver Lock and the deepening of Mobile Harbor. Through the wisdom and steadfast support of the Appropriations Committee, it has been possible to accomplish the planning, design and initial construction at Oliver on an orderly and efficient basis. Preliminary preparation work is complete and work is about to begin on the construction of the lock chamber and the dam.

Inclusion of the entire Federal share of $15.5 million for Oliver Lock is critical as this will be matched by an equal amount from the Inland Waterway Trust Fund to produce the required $31 million. Therefore, any reduction would be doubly detrimental.

Summary of Funds Requested

Warrior-Tombigbee Waterway	
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Mobile Harbor	
Operations & Maintenance Funds, included in Corps' Budget Request	$4,774,000.
Funds for New Construction, included in Corps' Budget request	9,885,000.

We believe the Warrior-Tombigbee Waterway is a classic example of the most positive aspects of the Civil Works Program. The Congress has seen its potential and has supported its program. And now the project continues to demonstrate its worth, having more than doubled the projected tonnage and benefits. I wish to emphasize that the funds which we seek are of investment category, not expense. This is seed money, spawning reinvestment many times over.

We fully endorse and seek the approval of these items. I, as President of the Warrior-Tombigbee Development Association, our other Officers, our Board of Directors, and our Members appreciate the consideration of the Chairman and members of this Subcommittee and its staff have shown us over the years. We ask for your support once again.

We are attaching additional written statements of support, along with a witness list, representing a cross-section of business, industry and the public.

Thank you for your consideration. We stand ready to answer questions.

WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION
WASHINGTON APPROPRIATIONS HEARINGS
LIST OF STATEMENTS

Alabama Electric Cooperative, Andalusia, AL
Alabama Power Company, Birmingham, AL
Alabama State Docks Department, Mobile, AL
American Cast Iron & Pipe Co., Birmingham, AL
American Commercial Barge Line Company, Harahan, LA
AmSouth Bank N.A., Birmingham, AL
Cargill Marketing Company, Inc., Mobile, AL
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U.S. Steel Corporation, Fairfield, AL
Volkert & Associates, Inc., Mobile, AL
Vulcan Materials Company, Birmingham, AL
Jim Walter Resources, Inc., Brookwood, AL
Warrior & Gulf Navigation Company, Mobile, AL

Senator JOHNSTON. Thank you, Mr. Nichols. It was nice to have you back before the committee.

Of course, I have worked on this project for a long time and I am frequently reminded of its cost-effectiveness by Senator Shelby and Senator Heflin, and I know about it first-hand anyway.

I will tell you when the cost of petroleum gets back up where it is going, it is going to be much more valuable and it is going to be even more cost-effective, so we are going to be awfully glad. We are glad we have these projects now, but we are really going to be glad when OPEC puts the squeeze on us again.

Mr. NICHOLS. There is one other thing that is not widely known, and that is that the Fairfield facility of United States Steel is obviously going to be one of the surviving facilities of United States Steel and, within the last 4 or 5 years, United States Steel has invested over a billion dollars in that facility. Right now, a state-of-the-art subtester is being completed at United States Steel.

When that is finished, they have agreed to move 3 to 4 million tons of ore and steel related traffic in the waterway. It has dropped off because they were down there during this flooding period.

We are witnessing the rebirth of the steel industry in our area and it is very exciting.

Senator JOHNSTON. I am glad to hear it.

Thank you very much. There is a large stack of supporting documents which we will put into the record.

Next we are going to welcome Mr. John Dutton, director of the Alabama State Docks Department for the Port of Mobile.

PORT OF MOBILE, ALA.

STATEMENT OF JOHN DUTTON, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

Mr. DUTTON. With me to my left is Buzz Heggeman from the Mobile Chamber of Commerce, who I think is scheduled to appear next.

It is a privilege and a pleasure for us to appear before the committee today representing Alabama State Docks and the Port of Mobile. We would like to again compliment this committee on the excellent work you are doing to maintain and sustain one of our nation's most vital economic resources—our national waterways and ports systems.

Mr. Chairman, we have previously submitted a written statement of our comments with regard to Mobile Harbor, and we respectfully request at this time that they be entered into and made a part of the permanent record of these hearings.

We can report to you that once again, this year, the Port of Mobile has a positive trade balance with large exports of coal, grain, and forest products, and the harbor deepening project has been initiated and is in progress and additional dredge sediment disposal sites have been acquired.

We are requesting the funding of the Corps of Engineers capacity level of $5,809,000 for fiscal year 1989.

Mr. Chairman, thank you for the opportunity to appear before this committee today.

Senator JOHNSTON. Thank you very much, Mr. Dutton.

Senator Shelby?

Senator SHELBY. Mr. Chairman, I think you are doing an excellent job in conducting the hearing. I do appreciate your hearing and seeing again and showing your knowledge of these projects, whether they are in Mobile, whether they are on the Coosa, the Warrior-Tombigbee, because this is all part of our waterways and you look at it from a national perspective and I do appreciate this.

[The statements follow:]

STATEMENT OF JOHN B. DUTTON, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

Good day Gentlemen:

On behalf of the Alabama State Docks Department and the Port of Mobile we appreciate the opportunity to again appear before this Committee and offer this statement in regard to Fiscal 1989 appropriation measures relative the Mobile Harbor.

The Alabama State Docks Department is the terminal facilities operator for the Port of Mobile and operates and maintains port handling facilities at Mobile which include a Bulk Material Handling Plant, Public Grain Elevator, Export Coal Handling Terminal, general cargo facilities including wharves, piers and warehouses as well as a Terminal Railway. In addition, the Alabama State Docks operates a number of inland port terminals throughout the river systems of the State of Alabama.

The port complex as it exists today entails approximately 1445 acres and is valued in excess of $500 million.

The primary cargoes handled through the Port of Mobile include inbound ores such as bauxite, manganese, magnetite, ilmenite, iron ore and steam coal. Grain exports include soybeans, corn, wheat, oats, milo, middlings, and screenings. Coal for export constitutes a major cargo as well as outbound crude oil which moves to the Port from recovery operations in Florida and North Mobile County.

During the last decade the Alabama State Docks Department and the State of Alabama have expended in excess of $250 million on renovations, expansions and improvements to the Port's handling capabilities at the Mobile facilities and is

continuing to expend financial resources with the renovation of one of the major existing warehouse facilities which will become a modern forest products terminal.

Plans are additionally underway for the creation of an iron and steel berth for the handling of both import and export cargoes as well as project and heavy lift tonnages.

These funds have, of course, been expended to meet present as well as future cargo handling requirements by those loyal users of the Port's facilities through our inland river system, the five trunk line railroads which serve the port, and the over fifty truck lines which initiate and terminate cargo in Mobile.

In our testimony in previous years we have discussed with this Committee the pressing need at the Port of Mobile for the acquisition of additional dredge sediment disposal sites, and, of course, the better utilization of existing sites through systematic management of sediment disposal. The management system has been in place for the last several years and we are pleased to advise this Committee that the Alabama State Docks Department has recently reached a negotiated agreement with the Aluminum Company of America for the acquisition of additional sediment disposal acreages. This agreement will significantly and positively benefit the Department as the local sponsor for channel maintenance operation in Mobile to adequately provide for the sediment disposal.

The Alabama State Docks Department, therefore, in concert with the Governor of the State of Alabama is supporting the U. S. Army Corps of Engineers' Budget request in regard to Operation and Maintenance of the Mobile Ship Channel as well as

the new construction project which deepens the Channel from 40 feet to 45 feet.

Dredging in the Mobile Ship Channel in recent months has been restricted due to inadequate sediment disposal sites and with the event of the recent acquisition by the Alabama State Docks Department of additional acreages, the Department is respectfully requesting that this Committee increase the Corps of Engineers Budget Request for Operation and Maintenance for fiscal year 1989 from $4,774,000 to the Corps actual capability with respect to this project.

Additionally, the Alabama State Docks Department is supporting the Corps' Budget Request for construction with respect to the deepening of the Channel of $9,685,000.

We again appreciate the opportunity to appear before this Committee and voice our support in concert with that of Governor Guy Hunt for the Fiscal 1989 Budgeted Allocation to reflect the requested amounts.

The Alabama State Docks Department respectfully requests this statement be incorporated in and made a part of the permanent record of these Hearings.

STATEMENT OF B.J. HEGGEMAN, JR., VICE CHAIRMAN, PORTS AND WATERWAYS TASK FORCE, MOBILE AREA CHAMBER OF COMMERCE

Good Morning:

Please let me express to you our sincere appreciation for the opportunity to appear before this Committee on behalf of the Port and Waterways Task Force of the Mobile Area Chamber of Commerce in regard to fiscal year 1989 appropriations measures relative to the Mobile area.

Our Task Force Committee is comprised of all facets of the maritime community in the Port of Mobile, which services include pilots, tugs, towboats, agents, marine suppliers, stevedores and terminal operators. As such, we feel that our Task Force is very representative of the marine interests in our port.

We are cognizant of the vital benefits derived from having the Alabama State Docks Department being in a position to handle the myriad requirements of the safe movement of the maritime cargo from inland conveyances to waterborne vessels. As such, an integral part of this is adequate and continuous water depth to meet the needs of this foreign waterborne commerce.

Our primary concern (which is deemed critical) is the dire need at the Port of Mobile for the acquisition of appropriate adequate additional dredge sediment disposal sites as well as the proper utilization of existing sites through the proper management of these disposal areas. As has been previously testified by the Alabama State Docks, additional sediment disposal acreage has been acquired which should go a long way towards a long range solution to our port having proper and adequate disposal acreages.

The efforts of the Governor of the State of Alabama and the U.S. Army Corps of Engineers' budget requirements in regard to operation and maintenance of the Mobile Ship Channel as well as the new construction

project underway which will deepen the channel from forty (40) feet to forty-five (45) feet are appreciated and heartedly endorsed.

In recent years the maintenance dredging of the Mobile Ship Channel has been severely restricted due to inadequate sediment disposal sites, however, with the recent acquisition of additional acreage we fully support their request that this Committee increase the U.S. Army Corps of Engineers budget requirements for operations and maintenance for fiscal year 1989 from $4,774,000.00 to the Corps actual capability with respect to this project. We also continue to support the Corps budget request of $9,685,000.00 with respect to our channel deepening and the $200,000.00 request for Bayou La Batre for preconstruction engineering and planning.

Thank you for the opportunity to appear before this Committee in support of fiscal year 1989 budget allocations as stated above. We respectfully request that this statement be included in and made a part of the permanent record of these hearings.

PREPARED STATEMENTS

Senator JOHNSTON. And as I mentioned earlier, all of the statements you have submitted will be made part of the record.

[The statements follow:]

STATEMENT OF GOV. GUY HUNT OF ALABAMA

Dear Senator Johnston:

It is a pleasure once again to participate with the Warrior-Tombigbee Development Association in the Subcommittee hearings in support of continued commercial navigation on the Black Warrior-Tombigbee Waterway in Alabama. The Warrior-Tombigbee Development Association, in addition to providing support for this very important waterway in Alabama, has also been instrumental in providing a forum for national water policy discussion on emerging issues of regional and national concern. The Association Chairman, Mr. Sheldon Morgan, is currently the Chairman of the National Waterway Conference, Inc. The Association Vice-Chairman, Mr. J. Nicholas Barchie, Jr., serves on the Inland Waterways User Board. Other members of the Association including its President, Mr. Offa S. Nichols, Jr. are making valuable contributions not only to the wise utilization of the Black Warrior-Tombigbee Rivers, but to the other waterways in Alabama and the nation.

The Black Warrior-Tombigbee Waterway makes a very important contribution to the economy of Alabama, the region and the nation. The tonnage shipped on a waterway is often used as an indication of the general health of a waterway. In this regard the movement of goods on the Black Warrior-Tombigbee Waterway certainly indicates the continued heavy utilization of this system to transport commerce. However, tonnage figures only indicate part of the story. Countless jobs are created by those industries shipping, handling and utilizing the goods shipped. The tonnage figures also do not reflect rate response by other modes of transportation or the secondary impacts to the economy of low cost energy efficient water transportation.

The State of Alabama is aware of the importance of the Black Warrior-Tombigbee Waterway to the state. To emphasize the importance of waterways, I assigned to the Alabama Department of Economic and Community Affairs (ADECA) in June 1987 the principal role in regards to waterway development in Alabama. The ADECA has met in recent months with waterway interests as represented by associations such as the Warrior-Tombigbee Development Association and with state and federal agencies in an effort to define further the appropriate role of the state, especially in regards to Public Law 99-662. We are working toward an enhanced partnership to respond to the opportunities commercial navigation and water resource development can offer.

I join with the Warrior-Tombigbee Development Association in support of continued operation and maintenance of the Black Warrior-Tombigbee Waterway at a funding level sufficient to provide for additional capability to allow for the orderly and efficient continuation of the on going channel efficiency improvement projects. I also join with the Association in support of continued funding of the Oliver Lock and Dam replacement. The Administration's request for $15.5 million which is to be matched by an equal amount from the Inland Waterways Trust Fund should be adequate to continue the orderly replacement of the Oliver Lock and Dam.

I appreciate the opportunity to participate with the Warrior-Tombigbee Development Association in support of these requests and pledge my continued support of the national inland waterway system.

STATEMENT OF TUSCALOOSA STEEL CORP.

Tuscaloosa Steel Corporation began operations, at a Black Warrior Riverfront Site, in October, 1985. TSC's design was to produce high quality hot rolled steel coils and plate in a technologically advanced, low cost plant, in direct competition with foreign and domestic procedures. A major factor in the decision to locate in Tuscaloosa, Alabama was the port facilities in Mobile for unloading high quality, domestically unavailable, semi-finished feedstock and The Warrior-Tombigbee River System for the low-cost tranportation of finished products.

Since then, TSC's growth and our use of the port and river system has dramatically increased. TSC, currently, receives and transports 275,000 tons of semi-finished slabs from Mobile to Tuscaloosa. Approximately 235,000 tons of finished product or 40% of TSC capacity was shipped out by barge to ports as far north as Chicago and as far west as Tulsa. TSC was the first domestic producer to ship steel into the Port of Houston in 30 years! The Warrior-Tombigbee System is not merely an alternate transportation method to TSC but the only way we can do business with some of our customers.

In addition, during 1987, the volume of shipments via the Warrior-Tombigbee System exceeded TSC barge unloading, loading capacity. A short-term solution was achieved with the assistance of the University of Alabama, but the long-term solution is to increase the capacity of our facilities. A key element in that decision is the long-term viability of the waterway.

TSC is pleased that $15.5 million is proposed for the new construction of the Oliver Lock project which will improve our capabilities. However, this element of positive growth is offset by an inadequate $12.8 million for operations and maintenance. A shiny, new lock without a river to support it is folly. TSC urges that the proposed budget be increased to continue projects critical to river operation. TSC also requests the approval of "additional capability" funding to the extent possible.

STATEMENT OF THOMPSON TRACTOR CO., INC.

The Warrior-Tombigbee Waterway is of vital importance to Thompson Tractor Co., Inc. Our company is an independently owned Caterpillar franchise and presently serves the state of Alabama and the ten counties of Northwest Florida.

We presently have 660 employees in our company dedicated to the sale and service of Caterpillar earthmoving machinery, lift trucks, and engines. Our engine division competes for all applications of needed power; direct, standby electrical, marine, and over the road. Our products are found where materials are moved: coal, woods, sand and gravel, grain, chemicals, and manufactured goods.

Our major market, of which Thompson Tractor Co., Inc. has great concern, is coal. The Alabama market has been drastically hurt by less expensive domestic and foreign coal. The Warrior-Tombigbee must be continually improved through your funding to keep the Alabama coal producers competitive. The majority of this once One Billion Dollar Industry needs cost efficient barge service.

Another industry benefitting from water transportation is pulp, paper and paper products. This is now the largest industry in Alabama with revenues exceeding One Billion Dollars. As the export market expands, so does the need for good water transportation.

I believe the Corps of Engineers budget in inadequate for needs for 1988. Although the funding will allow work to be continued on the much needed Oliver Lock, monies will be needed for several projects to improve channel efficiency and reduce costs.

Thompson Tractor supports the April 11, 1988 testimony of the Warrior-Tombigbee Development Association. Alabama's water system needs to move ahead in the world market of trade. We pledge our support to the success of this critical waterway.

STATEMENT OF TENN-TOM TOWING, INC.

As a member and director of the Warrior-Tombigbee Development Association, as well as a regular user of the Warrior-Tombigbee Waterway, we wholeheartedly support the testimony of the President of the Warrior-Tombigbee Development Association, Offa S. Nichols, Jr.

We primarily move petroleum products on the waterway and also operate a petroleum terminal in the Mobile Harbor. Without the proper funding of the Operations and Maintenance program of the Corps of Engineers it would be impossible for this area to compete with other operations on the Gulf Coast.

While we fully support the Corps' budget request for $12.8 million in Operations and Maintenance funds, we feel this amount only supports the absolutely necessary operations task and does not allow for continuation of the on-going deficiency correction program. Without the on-going dredging maintenance the navigation channel cannot be efficient or reliable and will only increase the future maintenance cost.

Therefore, we support Mr. Nichols testimony in requesting the "additional capability" funds for the continuation of these projects for the benefit of all users of the waterways.

We presently utilize the entire length of the Warrior-Tombigbee and work daily in and around the Port of Mobile. Without the constant operations and maintenance performed by the U. S. Corps of Engineers, it would not be possible for the barge traffic industry to continue to grow and provide this country with the most economical and energy efficient mode of transportation available today.

We appreciate the opportunity of expressing our views on the Warrior-Tombigbee Waterway System and the Port of Mobile and want to thank you for your cooperation in the past and continued interest for the future of all waterways in our nation.

STATEMENT OF AMERICAN CAST IRON PIPE CO.

As President and Chief Executive Officer of American Cast Iron Pipe Company, I request your favorable approval of request of Corps of Engineers for Operations and Maintenance funds for the Warrior-Tombigbee Waterway and Port of Mobile. It is my feeling that the $12.8 million requested budget should be increased and that additional funds should also be made available to continue work on the new Oliver Lock as well as provide "additional capability" funding.

ACIPCO exports approximately 40,000 tons per year through the Port of Mobile. Our employment is in excess of 2,500, and our export business has been a major contributor through the years to the growth and well-being of our company. The Warrior-Tombigbee is important because of raw steel that is imported to Tuscaloosa Steel Corporation (with whom we are in partnership) which is one of our major suppliers of steel skelp with which we manufacture a superior quality steel pipe for oil and gas pipeline service.

It will be appreciated if the Subcommittee will afford Colonel Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, every consideration when we makes his presentation before your group in April.

It is my opinion that the Warrior-Tombigbee Waterway is a real asset to our country as well as to our company and that every effort should be taken to allocate necessary funding needed.

STATEMENT OF WARRIOR & GULF NAVIGATION CO.

I am Nicholas J. Barchie, Jr., President of Warrior & Gulf Navigation Company. Our company is a member of the Warrior-Tombigbee Development Association and thereby supports the testimony to be presented by Mr. Offa Nichols as President of the Association. In the following paragraphs, we wish to address the extreme importance the Warrior-Tombigbee Waterway and the Port of Mobile has on our company.

Warrior & Gulf Navigation joins in a collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway due to lower costs, energy efficiency, and the major importance it has on domestic and international trade; e.g. low transportation costs via water is imperative to the coal producers, steel producers; farmers and paper companies in Alabama to maintain competitive prices in the world market in the movement of their coal, grain, steel and various forest products.

Warrior & Gulf is a barge line located in Chickasaw, Alabama and owns 27 towboats and 300 barges making us one of the larger water carriers operating on the BWT system. With our current equipment ownership our annual capacity is approximately 10,000,000 tons. Additionally, we operate one barge drydock, a coal handling and iron ore facility at Port Birmingham; one barge drydock and one boat drydock at our Chickasaw facilities; and, a wholly owned subsidiary of Warrior & Gulf, Mobile River Terminal, is another bulk terminal handling various cargoes from and to ocean-going vessels in the Port of Mobile. Our total employment is approximately 300 people.

Warrior & Gulf provides barge transportation on the BWT System for coal (domestic and export), iron ore, iron and steel products (export, import and domestic), scrap, gypsum and many other types of bulk commodities. With the recent opening of the new steel mill at Tuscaloosa, along with the pipe mill and the planned start-up of the new continuous caster at Fairfield, Alabama scheduled for November, 1988; and, the projected increases in coal consumption during the next few years we contemplate increases to materialize in our steel, iron ore and coal shipments; thereby, requiring an efficient and properly maintained waterway along with the Port of Mobile most important to WGN in our continuing efforts to accommodate the increased demand. Moreover, we must not lose sight of the fact, that the most recent commitment to a new caster at Fairfield; commitments to private investment; and, other economic development to continue along this magnificent waterway such as the new Tuscaloosa Steel mill depends largely on our ensuring a viable and low cost transportation on this waterway. The continued efficiency of this waterway is critical to the viability of these new industries.

Warrior & Gulf began using the Warrior-Tombigbee Waterway in 1940. During 1985, our capital investment for new equipment approximated $2,000,000; and in 1986 another $2,100,000; and in 1988 approximately $4,500,000; in order for our company to continue providing economic water transportation to its customers along this waterway.

With regard to construction funding the budget proposes $15.5 million to continue the new Oliver Lock. Approval of this amount is critical to the timely and efficient contract placement to remove this dangerous and costly bottleneck; and, to support the Corps' proposed schedule to replace this antiquated lock.

Historically, our shoaling problem varies greatly from season to season dependent upon the length of our high water season (December - April) and the amount of flooding that occurs, e.g. during the season where the river stages run 60 feet or more for prolonged periods causes the shoaling to become more severe. Accordingly, the proposed amount for the Warrior-Tombigbee System's Operations & Maintenance is $12.8 million. The 5 year average is $13.5 million, which is somewhat lower than the longer term average due to the absence of major flooding and shoaling over the past couple of years. At best, the $12.8 million would probably support the bare bones operations tasks; however, it does not allow for the continuation of the on-going channel deficiency correction program. For example, actions that have been underway for several years to improve dredging disposal and reduce shoaling would have to be discontinued or terminated. Continuation of these programs are very critical to the efficiency and reliability of the navigation channel and to the reduction of future maintenance costs. Simply stated, we need the "additional capability" funding as the Corps' budget request is presently inadequate and needs to be increased.

In closing, we wish to confirm our support for the Corps' budget request for $12.8 million in O&M for the Black Warrior-Tombigbee System and $15.5 million for construction funds to continue the new Oliver Lock; however, we strongly feel additional funds should be made available to ensure both an adequate O&M program and continuation of the channel improvement work on the BWT. Additionally, we support the Corps' budget for O&M and construction funds to continue the deepening project at Mobile Harbor.

We respectfully request your continued support and assistance as your subcommittee considers appropriation of funds for these very important issues concerning the Black Warrior-Tombigbee System and Mobile Harbor.

Statement of South Central Bell

As you know, South Central Bell has, for many years, been interested in the continued development of Alabama's many resources. We feel that the state's potential as a major economic influence in the South is yet to be tapped, and the Warrior-Tombigbee Waterway and Port of Mobile projects are two efforts which will lead toward that goal.

As a corporation operating within the state, we are committed to its economic development. In fact, we have a corporate value which states, "Since our vitality as a business is tied to the quality of life in the area we serve, we will apply our corporate and individual energies to the betterment of the communities and states where we operate."

While a growing economy will result from continued work on and completion of these projects, Alabama would also see better education and employment opportunities. In general, the continued efforts of the Warrior-Tombigbee Development Association would indirectly enhance the quality of life which permeates the entire Southeast region. The long-term effects of the projects will benefit every citizen and business in the state, as well as aiding energy conservation efforts and local, national and international trade in the state.

I would also like to lend my full support to the Corps of Engineers' request for adequate funding to continue work already begun on the Mobile Harbor project and for general operations and maintenance programs. These will reduce costs and increase channel efficiency in the future. Please consider allotting further appropriations for these purposes.

I appreciate your taking my endorsement of the project into consideration. I'm sure the Association can count on your support as well.

STATEMENT OF UNITED STATES STEEL

United States Steel Division of USX Corporation has demonstrated its commitment to maintain operations in Alabama by constructing a new continuous slab caster at its operation in Fairfield, Alabama. In addition to the slab caster, improvements are underway to associated rolling mills.

USX Corporation operations, both steel and mining, rely heavily upon availability of Alabama's river system to transport iron ore, pellets, coal, coke ferroalloys and finished steel products. Our plans call for movement of approximately 3.8 million tons of material per year by barges between Mobile and Birmingport, Alabama. It is for this reason that we offer continuing support for the Corps of Engineers in their request for operation and maintenance appropriation for 1988. The Warrior Tombigbee System must be properly maintained to support business growth in Alabama.

We support the actions of the Warrior Tombigbee Development Association in their efforts to assist the Corps of Engineers.

STATEMENT OF ALABAMA POWER CO.

Dear Senator Johnston:

The Warrior-Tombigbee Waterway is vital to the economic health of Alabama. The state's water transportation system must be efficient and well-maintained for the basic industries, such as mining and heavy metals, to provide a sound economic base for the state and for Alabama to enjoy economic growth.

Alabama Power Company's continued interest in the Warrior-Tombigbee Waterway is two-fold. First, our business is dependent on the general economic health of the state; and, second, we are a primary user of the waterway. For nearly three decades, we have used economical water transportation to deliver coal to two of our major electric-generating plants.

Four of Alabama Power Company's seven fossil-fueled, electric-generating plants are located on the Warrior-Tombigbee Waterway system. Coal from the Warrior coal field is delivered to two plants near the coal field and loaded onto barges for shipment to two generating plants in the southern and central parts of Alabama. The 1,525-megawatt Plant Barry in Mobile County, which began operation in 1954, is supplied primarily by the Warrior-Tombigbee Waterway, as is the 500-megawatt Plant Greene County near Demopolis.

We are pleased that funds have been budgeted to initiate construction of the new Oliver Lock. The pre-World War II Oliver Lock's capacity is inadequate, and this creates a bottleneck which impedes efficient operations on the river. Also, adequate funds for operation and maintenance must be made available to the Corps of Engineers to continue efficient operation of the waterway and to avoid expensive and unnecessary interruptions to river traffic.

Alabama Power Company received 4.84 million tons of coal in 19[illegible] which were transported on the Warrior-Tombigbee Waterway. This represented 36 percent of the 13.6 million tons used to generate electricity for our customer's use. Failure to replace Oliver Lock or to properly maintain the waterway can have a significant adverse effect on the cost of providing electric service to Alabama Power Company's over 1,000,000 customers.

Alabama Power Company supports the collective efforts of the Warrior-Tombigbee Development Association, of which it is a member, to obtain the replacement of Oliver Lock and to obtain for the Corps of Engineers an adequate operations and maintenance budget which will ensure the long-term, efficient and economical viability of the waterway.

STATEMENT OF FIRST ALABAMA BANK

The Port of Mobile and the inland waterways serving it are major factors in the economy of Alabama and the U. S. Gulf Coast. The Warrior-Tombigbee Waterway is a vital factor in this respect. It serves the manufacturing, mining and the agricultural areas and industrial production facilities in western Alabama. The waterway has served as an economic stimulant for one hundred years, having been periodically improved until today, it is a modern system with one major exception, the Oliver Lock and Dam, which needs replacing.

This waterway is currently handling most of the coal moving out of Mobile for export. Many basic materials move on this system and it is important that funds for an adequate Operations and Maintenance program be appropriated for the BWT. The $12.8 million budget item requested by the Corps of Engineers is not adequate, based on past history. This should be carefully evaluated.

The construction for replacement of Oliver Lock has now begun, and the Corps' request for $15.' million for this construction program is important so that this continuing process not be interrupted.

The monies we are requesting are a valid investment by the Federal Government, which will continue to be matched many times over by local investment.

STATEMENT OF HARBERT INTERNATIONAL, INC.

The Warrior-Tombigbee Waterway is a vital transportation link in the State of Alabama. It provides for the most economical transportation of products of the mines, the iron and steel industry, agriculture, forest and other commodities, most of which is destined to the Port of Mobile for export; thus enhancing the U.S. balance of payments. The Waterway is a vital source of employment for thousands of people engaged in the above industries as well as barge operations and shipyards.

The proposed appropriation of $12.8 million for Operations and Maintenance of the Black Warrior-Tombigbee Waterway is a bare minimum of required funds and would not cover improved dredging disposal areas and reduce shoaling which has been discontinued due to lack of funds.

We do support the budget proposals of $15.5 million for continued construction on the Oliver Lock and we also support the Corps budget request for the channel deepening of Mobile Harbor.

Serious consideration should be given to "additional capability" funds for on going channel efficiency work in the river system which would reduce future maintenance cost.

A more efficient waterway ensures the continued growth of industry and is conducive to further economic development in an area with one of the higher unemployment rates in the nation.

I support the testimony to be given by the President of the Warrior-Tombigbee Development Association and hope that the importance of his comments will be well taken by the Appropriations Committee.

Statement of Mobile Area Chamber of Commerce

This statement is presented on behalf of the over 3,000 business members of the Mobile Area Chamber of Commerce in support of the continued development of the Warrior-Tombigbee Waterway system, and the desperate need to increase the funding for the United States Army Corps of Engineers.

The Port of Mobile, one of the top 10 ports in the United States based on tonnage handled (export/import) is dependent on the extensive Alabama Waterway System. These waterways, including the Warrior-Tombigbee system, play a vital role in the movement of both domestic and international commerce. Over the years as the records will confirm, the Warrior-Tombigbee system has grown annually in the amount of tonnage handled, primarily bulk materials, including but not limited to coal, ores, petroleum products and other materials. The export of some of these commodities has assisted greatly in our balance of payments which continues to be a growing problem for our nation.

Based upon the vital role of this major waterway system, we respectfully submit that the operation and maintenance budget for the United State Army Corps of Engineers FY 1989 is insufficient for the proper development of the waterway and request that consideration be given by your committee to increasing the funding to meet the Corps of Engineers capability on this and other projects.

We further respectfully request that this statement be incorporated and made part of the record.

Statement of Hunt Refining Co.

As a concerned user of the Warrior-Tombigbee Waterway, I would like to state my reasons for supporting this waterway.

Hunt Refining Company is a refinery that produces such products as all grades of gasoline, several types of asphalts, fuel oils and coke. We receive approximately 21,000 tons of crude oil per month and approximately 20,000 of vacuum bottoms by barge. We, in turn, barge out approximately 20,000 tons of crackerfeed a month. The above tonnage represents millions of dollars in revenue. Our dock facilities, which were first built in 1946, are located on the Black Warrior River, near the Oliver Lock and Dam. We have now completed an MTBE line and an asphalt loading line that are being utilized for the first time.

One crucial reason for us needing the waterway is that we make a product called "crackerfeed", named so because it is used in catalytic crackers. The only way we have of delivering this product is by the waterways. Fortunately, the refineries that we ship to are all over the intercoastal waterway.

With the opening of the Tennessee-Tombigbee Waterway, we anticipate the market in the North to open. We already have prospects to move an additional 100,000 tons/year to the Northern U.S. This gives us an optimistic view of other job possibilities.

We also receive crude oil from international freighters; first offloaded in Mobile into storage tanks, and then barged to our refinery.

In regard to the Port of Mobile, we would like to emphasize the draft limitations there and hope we can continue to have funding to allow us to offload our international freighters and move them in and out of Mobile in an economical and safe manner.

We were pleased with the proposed 15.5 million for the construction on the new Oliver Lock and Dam. But we were distressed to hear that actions underway

for several years to improve dredging disposal and reduce shoaling would have to be deferred or terminated. A continuance of these programs are crucial to the efficiency and reliability of the navigation channel and to the reduction of future maintenance costs. So we are requesting additional capability funds sufficient to support continuation of the on-going channel improvement work.

Statement of Gulf Power Co.

Gulf Power Company is an investor-owned electric utility and a member of The Southern Company; we serve 273,544 customers in Northwest Florida. Our company utilizes coal for over 99 percent of its total generation requirements within Florida and consumes approximately 3.7 million tons per year for that purpose. Over 91 percent of our coal deliveries in Florida are dependent upon waterway transportation.

In 1987, Gulf Power moved approximately 490,000 tons of coal on both the Tennessee-Tombigbee and the Warrior-Tombigbee Waterways and/or through the Port of Mobile. The remainder of Gulf's coal delivered over the national river systems originates from the Southern Illinois Coal Basin vicinity and travels down the Mississippi River through the Port of New Orleans. From the ports of New Orleans and Mobile, all waterway deliveries travel via the intercoastal waterway for delivery at our Pensacola and Panama City generating plants.

As you can see from Gulf's dependence on the Tennessee-Tombigbee and Warrior-Tombigbee Waterways and the Port of Mobile, we wholeheartedly support the need for adequate funding to properly maintain and improve operations. It is imperative that Gulf continue to receive coal shipments in order to provide continued reliable electric service at the most economical cost to our customers. We are also concerned about the future industrial growth in our service area and must be certain that adequate fuel supplies can be transported to our generating plants.

In summary, we are in full support of the efforts of the Warrior-Tombigbee Development Association to provide efficient and reliable waterway systems for coal delivery. We urge you to approve the Corps' O&M Budget request to provide adequate funds to maintain the Warrior-Tombigbee Waterway and the Mobile Harbor. In fact, we would urge you to approve more than the proposed $12.8 million which will only provide bare bones operation tasks. Also, the $15.5 million funding for new construction at Oliver Lock is a very important part of the Corps' budget request and must be approved.

We feel that it is not only in Gulf Power's interest to support this worthy endeavor, but also in the best interest of the customers of our service area and the nation to improve our capabilities to transport coal and other commodities from points of origin to market places via the Warrior-Tombigbee Waterway and the Port of Mobile.

STATEMENT OF MINING DIVISION, JIM WALTER RESOURCES, INC.

I would like to thank you for the opportunity to make a statement to your Subcommittee. Please accept this letter as my statement.

The Mining Division of Jim Walter Resources, Inc. mines over 9 million clean tons of coal per year. Of that amount, nearly 50% of our production is exported. Approximately half of our export production travels down the Warrior River and all of our export production goes through the Port of Mobile. Our payroll for 3,480 employees last year was in excess of $110,000,000 and taxes withheld and/or paid were in excess of $37,000,000. It is obvious from these facts and figures that this Company relies heavily on our waterways and port facilities and that they are of the utmost importance to this Company, its employees and the economy of the State of Alabama.

I strongly support the Corps' of Engineers budget request for at least $12.8 Million in Operations & Maintenance funds and $15.5 Million in construction funds for the Black Warrior-Tombigbee and Oliver Lock. Our waterways and port facilities provide economic prosperity to Alabama that is worthy of your support. Further, I support the statements and testimony to be given by Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. I believe that the value of improved efficiency and reliability of the Warrior-Tombigbee Waterway and Port of Mobile cannot and must not be underestimated.

Consequently, I urge you to consider increasing the proposed appropriation for Warrior-Tombigbee Waterway operations and maintenance. The amount currently proposed is inadequate to allow additional capability for ongoing channel deficiency corrections. An appropriation at this level threatens both the efficiency and reliability of our waterways.

The world coal business is at its most competitive level in history. News of any problems, especially transportation and delivery problems, is quickly spread by other coal producers around the world to the buyers to discourage purchases here. A blemish on our delivery record can have devastating, long-term effects from which we might never fully recover. Buyers lost today may never return tomorrow.

Again, thank you for this opportunity to give my comments on this very important matter.

Statement of Parker Towing Co., Inc.

My name is Tim Parker, Jr. and I am President of Parker Towing Company, Inc. I wholeheartedly endorse and support the testimony of Colonel Offa Nichols, President of the Warrior-Tombigbee Development Association. I join with him and other members of the Warrior-Tombigbee Development Association in efforts to improve the efficiency and reliability of the Warrior-Tombigbee Waterway.

Parker Towing Company operates a fleet of one-hundred twenty-two (122) hopper barges and twelve (12) towboats. We have been providing barge transportation service to shippers on the Warrior-Tombigbee Waterway for over fifty (50) years.

The Warrior-Tombigbee Waterway and Port of Mobile are not only important to my company and industry, but it is a vital part of the economic well being of Alabama. Most of the coal exported from Alabama, through the Port of Mobile, moves to Mobile via the Warrior-Tombigbee Waterway. Agricultural products also move in considerable volume via the Warrior-Tombigbee for export. On almost any given day, you will find a wide variety of items being shipped by barge including not only coal and agricultural commodities, but also forest products, iron and steel articles, salt, petroleum and chemical products, minerals, paper products and cement, just to name a few. This broad spectrum of products on the Warrior-Tombigbee Waterway clearly indicates the widespread economic impact this waterway has on business in Alabama.

As a member of the Warrior-Tombigbee Development Association, I support the U. S. Corps of Engineer's Operations and Maintenance (O & M) budget request and their Construction Budget request for the Black Warrior-Tombigbee, Oliver Lock, and Mobile Harbor. I respectfully request that "additional capability" funds should be made available to insure the continuation of the ongoing channel improvement program. Sufficient funding for O & M channel improvement and construction will lead to continued competitive barge transportation for Alabama shippers. Anything that we can do to make these shippers more competitive will lead to increased activity by our area's industry and to increased employment.

In closing, let me reiterate that the operation of the Warrior-Tombigbee Waterway is of great importance to not only me and my firm, but to the people of our region.

STATEMENT OF ALABAMA ELECTRIC COOPERATIVE, INC.

Alabama Electric Cooperative, Inc. (AEC) and its 22-members fully support the testimony of Offa S. Nichols, Jr., president of the Warrior-Tombigbee Development Association, before your Subcommittee. As a member of the Warrior-Tombigbee Development Association, AEC joins with the Association in its endeavor to improve the efficiency and reliability of the Black Warrior-Tombigbee Waterway.

AEC is a generation and transmission electric cooperative that supplies wholesale power to sixteen distribution cooperatives, four municipalities, and two industries in South Alabama and Northwest Florida. The distribution cooperatives and municipalities serve approximately one-half million consumers in sparsely populated areas. Due to the lack of population density in their service areas, the costs associated with the distribution of electric energy are substantially greater than in the heavily populated urban areas of the country. Therefore, these cooperatives which are non-profit, consumer-owned entities, operate on very slim margins. Thus, it can be readily preceived that anything significantly affecting the cost of generation, transmission or distribution of electric energy is of profound interest and concern to AEC and its member systems.

Presently, AEC has two coal-fired generating plants. The Lowman Power Plant (formerly Tombigbee Power Plant) is located at mile-point 89 on the Black Warrior-Tombigbee Waterway. The McWilliams Power Plant, a smaller older plant, is located on the Conecuh River. Unfortunately, the Conecuh River is not navigable and the McWilliams Plant can only receive coal via rail.

The majority of the electrical energy that AEC delivers to its members is generated at the Lowman Plant. This electrical energy is delivered over AEC's transmission system and is also wheeled over other companies' transmission systems. When the need arises, and if AEC has excess generating capacity at the time, this electrical energy can be wheeled to others.

Over 1.1 million tons of coal were shipped to the Lowman Plant in 1987 to generate the electrical energy to meet the needs of its members. It is projected that this tonnage will increase into the mid 1990's. Coal can be received by rail and barge at the Lowman Plant. However, 63 percent of the coal was moved to the plant via barge in 1987. This was due to the barge transportation cost being considerably less expensive.

In the 1960's the first 75 MW unit was installed at the Lowman Plant. Again in the 1970's the Lowman Plant site was selected for the installation of two 235 MW coal-fired units. One of the major considerations in selecting the Lowman Plant site was the availability of lower cost barge transportation via the Black Warrior-Tombigbee Waterway. The lower cost transportion therefore resulted in lower cost for electrical power for AEC member-consumers.

A future generating site on the Black Warrior-Tombigbee Waterway has been purchased by AEC. This site is approximately 50 miles North of the Lowman Plant. One of the major factors in the selection of this site was the availability of water transportation. AEC is anticipating installing new base load generation on this site in the mid to late 1990's.

AEC's 1987 fuel cost was approximately 43.1 million dollars of which 6.9 million was transportation cost. The 43.1 million dollars represented 30 percent of AEC's operating cost in 1987 with transportation being 5 percent. With fuel and transportation expense making up such a large percent of AEC's operating cost any change in this area has a marked affect on the cost of electrical energy to its members.

The Corps of Engineers' budget request of 12.8 million dollars for operation and maintenance funds for the Black Warrior-Tombigbee Waterway and the 15.5 million dollars in construction funds for the replacement of the Oliver Lock has AEC's full support. AEC also request "additional capability" funds sufficient to support the Corps continuation of the on-going channel efficiency work on the Black Warrior-Tombigbee Waterway and the Corps' budget request for operation, maintenance and construction funds to continue the deepening project at Mobile Harbor.

STATEMENT OF DRUMMOND COAL SALES, INC.

The following is a statement in support of improving the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

Drummond Coal Company was founded in 1935 by Mr. Heman Drummond who developed his first mine underground near Sipsey, Alabama. It was a drift mine, angling into a hillside from which men dug and mules hauled the bituminous Appalachian coal. Many of Mr. Drummond's customers were local people who needed coal for home heat. As his sons grew up, they joined him and the family opened their first surface mine using small diesel shovels. Half a century has passed since Mr. Drummond produced his first ton of coal.

Today, Alabama is a major coal producing and exporting state. Drummond Coal Company is the largest surface coal producer, one of the largest coal exporters in the southeastern United States, and one of the top twenty non-captive bituminous coal producers in the nations. Drummond serves metallurgial, utility and specialty coal customers on four continents from mines in six countries in north central Alabama. Drummond Coal Company alone presently employs in excess of 4,500 people with an annual payroll of approximately $120,000,000.

About 90% of the state's coal production, including most of Drummond's comes from the Warrior Field located in north central Alabama. The Warrior Field or Warrior Basin as it is also known, is a basin-like geological structure covering more than 3,500 square miles and underlying parts of Winston, Marion, Fayette, Tuscaloosa, Cullman, Blount, Jefferson and all of Walker County. The field is cut through by the Warrior River system which has led to development of mines using water transport.

Alabama's system of riverways offers water transport of national and international destinations via the McDuffie Coal Terminal at the year-round Port of Mobile on Alabama's Gulf Coast. Barging in Alabama is a particularly good way to move coal because of the extent of Alabama's waterways and because of the coal handling facilities available.

Drummond ships this coal from five different coal loading facilities located at various points on the Warrior River system, two of which are company owned and operated. Drummond owns and operates a barge loading facility located at milepost 354 on the Warrior River in conjunction with its Kellerman mining operation. This barge loading facility handles about 1,400,000 tons of production at the Kellerman Mine and 2,000,000 tons of production for the Jim Walter Corporation. Another company owned barge loading facility is located at milepost 401.5 on the Locust Fork portion of the Warrior River in conjunction with Dru-mond's Short Creek operation. This barge loading facility has the potential to handle approximately 1,000,000 tons per year at Port Birmingham which is located at milepost 399 on the Warrior River.

Obviously, reliance upon Alabama's efficient system of waterways has been a very integral part of Drummond Coal Company's planning and operations to date. Availability of an economical and efficient mode of transportation is important to any industry in getting the product to market; however, because of the national and international markets for coal, efficient transportation modes are even more critically important to the coal industry.

We, at Drummond urge your committees to support the proposed O & M money of $12.8 million for the BWT but feel that this will be at a level that could be dangerously low to carry on the maintenance programs that we need so badly.

We are pleased that $15.5 million has been proposed to continuing the new Oliver Lock construction and that a total of $31 million is needed, of which one-half is paid by the shippers (such as Drummond Coal Company) to the barge carriers for the Inland Waterway Trust Fund.

We also support continuing O & M and construction funds to continue deepening the harbor at the Port of Mobile.

By transporting its high quality coal product by an available and efficient waterway system, Drummond has been able to compete with other coal exporting nations in a successful manner and has contributed to reducing the current national trade deficit.

Drummond Coal Company is a member of the Warrior-Tombigbee Development Association. We strongly support the testimony given today by Mr. Offa S. Nichols, Jr., President of the Association, and heart-ly endorse the collective effort of the Association to improve the efficiency and reliability of the Warrior-Tombigbee Waterway. Traffic on the waterway presently represents only a small percentage of the river's ultimate capacity; given the needed improvements to the Oliver Lock and a continued commitment to a federally constructed and maintained inland waterway system are granted. Certainly, the federal investment in the Warrior-Tombigbee River System has paid dividends many times over with the improved economic development is the area which the Warrior-Tombigbee River System serves.

Statement of Dravo Basic Materials Co., Inc.

The Warrior-Tombigbee Waterway along with the other waterways of the State of Alabama are invaluable links to a successful Port of Mobile and the economic growth in South Alabama. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, will present testimony stressing the need for maintaining and enhancing the efficiency and reliability of the Warrior-Tombigbee System as well as the importance of low-cost, energy efficient water transportation to local, national and international trade. We fully support and endorse his testimony.

Dravo Basic Materials Company, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1987 we transported via Alabama waterways in excess of 1,250,000 tons of sand and gravel. We also transported over 200,000 tons of limestone as well as significant quantities of other products. Our projections for 1988 are:

Sand and Gravel	1,350,000
Other	500,000

Dravo Basic Materials Company, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. In order to provide this capability, it is imperative that the Army Corps of Engineers be provided with the appropriations necessary to continue the maintenance and development of the Warrior-Tombigbee Waterway System as requested in the fiscal year 1989 budget. It is also requested that additional funds be provided to insure that the Corps has the capability and flexibility necessary to maintain the utilization of the Waterway System and Mobile Harbor. Additionally, the continued provision for funds to replace the outmoded Oliver Lock and Dam should not be overlooked.

We sincerely appreciate the Committee's faith in the future of the State of Alabama and welcome its continued support of these vital projects.

Statement of American Commercial Barge Line Co.

On behalf of American Commercial Barge Line Company, I would like to express our continued support of the Warrior Tombigbee Waterway and to the funding of this project during FY 88. As active members of the Warrior-Tombigbee Development Association, we at ACBL wholeheartedly endorse the endeavors of the Association and the testimony of its President, Offa S. Nichols, Jr..

America's inland waterways have played a prominent role in the development of our nation. The significance of this transportation system is not only historical, it represents a vital force in our country's continued prosperity.

Therefore, approved funding for construction and maintenance on the Warrior-Tombigbee Waterway is imperative if this system is to realize its potential as a dependable and cost efficient means of transporting our nations agricultural and industrial commodities.

In reference to the Corps of Engineers funding for 1988, we support the proposed $12.8 million for BWT Operations and Maintenance. However, we share the opinion that "additional Capability" funds must be provided to insure the continuation of channel deficiency correction programs. Efforts to reduce shorline and improve dredging disposal must be continued in order to improve efficiency and reliability of the Navigational channel.

We also support and urge the approval of the $15.5 million in construction funding. The replacement of the Oliver Lock and Dam and the deepening of the Mobile Harbor will greatly enhance the future of this entire region.

Thank you for the opportunity to comment on this important matter of national concern. We believe that tax dollars spent on these projects will improve the economic health of our country and raise our competitive standing in today's world markets.

STATEMENT OF T.L. JAMES & CO.

T. L. James & Company, Inc. is a diversified construction company, based in Louisiana, that owns and operates seventeen hydraulic cutter-suction dredges that maintain the inland waterways of the Gulf and South Atlantic Coast Regions. Our Company supports the funding request by the Warrior-Tombigbee Development Association, for the Army Corps of Engineers' Operations and Maintenance Budget in fiscal year 1989. Our reasons are outlined in the following paragraphs.

The Army Corps of Engineers' Operations and Maintenance Budget is an important barometer of the economic health of our company, as well as the national dredging industry. "O & M" funding on the Warrior-Tombigbee navigation system funds an important segment of our business. More importantly, the funding provides a more efficient navigation system that reduces the cost of the work we perform for the Corps, and the cost of water-borne commerce in this region.

I would like to focus your attention on the fact that navigation and dredging interests are only two segments of the regional economy that are enhanced by "O & M" funding. Approximately 75% of the revenue from a dredging contract is funneled into the economy of the local community. An additional 10% of our revenue benefits the economy of our home port. Much of the labor employed on our equipment is provided from the local workforce of nearby communities. A payroll account is usually handled by a local bank. Local fuel and hardware suppliers receive approximately half of our revenues in the form of local purchases of those items. It is clear that "O & M" expenditures enhance the health of other commerce in the economy of the communities affected, as well as provide for more efficient and economical navigation.

A safe and reliable Warrior-Tombigbee transportation network is of paramount importance to the waterborne commerce on that network, as well as the health of the regional economy in general. I hope I have clearly outlined for you, from our perspective, the importance to us of the efforts put forth by the Warrior-Tombigbee Development Association concerning the Army Corps of Engineers "O & M" budget for fiscal year 1989.

STATEMENT OF DAVID VOLKERT & ASSOCIATES, INC.

David Volkert & Associates, Inc. (DV&A) supports the FY88 Corps of Engineer's funding for the Warrior-Tombigbee, Port of Mobile, and the efforts extended by the Warrior-Tombigbee Association to restore funding to adequate levels.

DV&A is one of the largest design engineering/architectural/planning firms in the State of Alabama, with Alabama offices in Mobile and Birmingham. We are aware of the importance of the Warrior-Tombigbee Waterway, not only to our company, which employees over 200 people, but to Alabama and the nation as a whole. Since Mobile's largest industry is its port, the further development of this Waterway would not only add to Mobile's commerce and industry, fueling monies into its economy and providing needed jobs for its people, but would also improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. This improved capability and reliability would allow for lower operating costs, higher energy efficiency, and added importance to local, national and international trade. With the shipments of coal, iron ore, farm products, and related products expected to rise in the future, the Warrior-Tombigbee

is increasingly important to maintain the serviceability of our waterway system.

Confidence in the Waterway and its efficiency and modernization are important in bringing much needed new industry to Mobile. Lower operating costs to users of the Waterway and Port are essential to obtain a reasonable balance of the international export market allowing the U.S. to reduce our trade deficit. Increases in shipping and commerce result in opportunities for many companies, similar to DV&A, to obtain business and offer meaningful employment to citizens of the State of Alabama and other parts of the U.S.

DV&A supports the Corps of Engineers' budget request for $12.8 million in O&M funds and $15.5 million in construction funds for the Black Warrior-Tombigbee and Oliver Lock. We feel, however, additional funds should be made available in order to allow for continuation of channel improvemnets already underway, which are designed to reduce future costs.

DV&A also supports the Corps of Engineers' budget request for O&M and construction funds to continue the deepening project at Mobile Harbor. This project is of utmost importance to the growth and prosperity of the Port of Mobile.

We appreciate this opportunity to express to you our support of Col. Nichols, President of Warrior-Tombigbee Development Association, and the testimony to be given by him before the Appropriations Committees of the Senate and House. We are proud to join in the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile.

Statement of Mississippi Power Co.

Colonel Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association, is appearing before your Subcommittee in support of the Waterway and the Corps of Engineers' budget request relating to the project. As President of Mississippi Power Company, a user of the Waterway, I am writing in support of Colonel Nichols' testimony. I am also requesting consideration be given to increasing the proposed funding level to ensure both an adequate operation and maintenance program, and continuation of the channel efficiency work for the BWT.

The cost of fuel is the single largest operating expense Mississippi Power Company faces. Coal mined in the region served by the Warrior-Tombigbee Waterway provides us with a reliable, competitive source of fuel. Any deterioration of the reliability of shipping along the Waterway would force the Company to higher cost suppliers.

Furthermore, the Warrior-Tombigbee is one of only two alternative waterways by which coal is delivered to our generating units. Should there be disruptions in the coal deliveries that normally come down the Mississippi River, the Warrior-Tombigbee would provide the only viable waterborne alternative for ensuring that adequate supplies of coal are delivered to Mississippi Power Company in a cost effective manner.

The Warrior-Tombigbee Waterway has played an important role since 1976 in the delivery of coal to Mississippi Power Company's facilities. In

1987, approximately 441,000 tons, or 13 percent, of our coal purchases were shipped over this Waterway.

Mississippi Power Company operates in Southeast Mississippi and provides electric service to over 173,000 customers. Our customers include several military installations, federal government agencies, and prime defense contractors.

Any deterioration in the ability to ship over this waterway, or an increase in our cost due to increased delays, would not only adversely affect all of these customers including federal installations, but would also impede future economic development in Southeast Mississippi.

Your favorable consideration of the testimony on behalf of the Warrior-Tombigbee Development Association will be greatly appreciated.

STATEMENT OF VULCAN MATERIALS CO.

We support the testimony of the Warrior Tombigbee Development Association. We are part of the collective effort to improve the efficiency and reliability of the Warrior-Tombigbee Waterway and the Port of Mobile. We began utilizing the Tennessee-Tombigbee Waterway in November, 1987 and our plans for the future include the use of the Warrior-Tombigbee waterway to ship crushed stone to the Gulf Coast to be used by the construction industry in concrete, asphalt and road bases. The crushed stone will replace the rapidly depleting gravel, clam and reef shells with a superior construction material. The upgrading of the waterway will not only benefit an area with unemployment still among the highest in the nation, but will better utilize the lower cost, energy-efficient barge transportation.

We support the Corps budget request of $12.8 million for operations and maintenance and $15.5 million for construction on the Warrior-Tombigbee and Mobile Harbor, but we request that additional funds be made available to ensure both an adequate O&M program as well as the continuation of several projects already underway that will improve channel efficiency and reduce future cost. I thank you for your efforts in acquiring the funds to initiate the construction of the new Oliver Lock which will be an investment in the future of our nation and region, as well as Alabama.

STATEMENT OF CARGILL MARKETING CO., INC.

Cargill Marketing Co., Inc., formerly Lapeyrouse Grain Corporation, operates country elevators in five southern states. Two of these facilities are located on the Warrior-Tombigbee Waterway System and are directly impacted by the navigability of this project.

To date this system has provided reliable, low cost transportation to the surrounding agricultural communities. These grain products move into the export market through Mobile Public Elevator.

Our interest is in seeing this waterway maintained and upgraded. We ask you to accept and support the testimony being presented by Mr. Offa S. Nichols, Jr., President of the Warrior-Tombigbee Development Association. We support the Corp's budget request for $42.8 million in operation and maintenance funds as well as $15.6 million in construction funds for the Warrior-Tombigbee and Oliver Lock.

We also support the Association's request for 'additional capability funds' sufficient to support the continuation of the on-going channel improvement work. This work will allow the continued, efficient use of the system by water borne transportation.

STATEMENT OF AMSOUTH BANK, BIRMINGHAM, ALA.

In Alabama, the Warrior-Tombigbee Waterway system is one of the most important transport systems that we have, enabling north and north central Alabama to link up with the seaport of Mobile by water and to transport materials up and down the waterway as it flows through the western part of the state adding to the prosperity of the state in those areas that it serves. This river system is a vital link in areas served by our bank, including Birmingham, Tuscaloosa, and Mobile, three of the four largest AmSouth banks in our company.

I know that Colonel Offa Nichols will give testimony to your committee at your forthcoming hearings. Colonel Nichols knows the Warrior-Tombigbee Waterway after a number of years working with the Warrior-Tombigbee Waterway Association as its President. I have been Secretary-Treasurer of that organization on a voluntary basis for the past several years and I commend Colonel Nichols to you as a man of integrity, experience and knowledge on the subject of waterway usage in Alabama and in the nation.

Many of us are concerned that the appropriation proposal of $12.8 million for the Warrior-Tombigbee maintenance and operation budget will not be sufficient, particularly in the event of any major shoaling and flooding. The $15.5 million provided for the new Oliver Lock construction should be adequate. The Oliver Lock construction continues to be vital to the continued use and growth of the Warrior-Tombigbee system.

We appreciate your interest and consideration in this river system. The funds mentioned above are necessary along with whatever additional capability funding is available.

Because the Warrior-Tombigbee is dependent upon the Port of Mobile as its main port, we support the Corps of Engineers budget request of the deepening of Mobile Harbor and the continuing operation and maintenance of the port.

Thank you for your consideration.

COOSA-ALABAMA WATERWAY, ALA.

STATEMENT OF J.T. McKENZIE, PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION

ACCOMPANIED BY:
WALTER B. STEVENSON, JR., ADECA, ALABAMA
RALPH O. CLEMENS, JR., EXECUTIVE VICE PRESIDENT

Senator JOHNSTON. Next we have the Coosa-Alabama River Improvement Association, with Mr. J.T. McKenzie, president.

Mr. MCKENZIE. Thank you, Senator.

I am Tom McKenzie and I am president of the Coosa-Alabama River Improvement Association. I have with me Walter Stevenson, who

was introduced a brief while ago as representing Governor Hunt; and Ralph Clemens, who is executive vice president of our association.

Each of these gentlemen will make remarks and we will try to keep it brief because we have submitted our written testimony already.

We would recommend vital operations and maintenance funding for the Coosa-Alabama River projects, as well as the new appropriation request of $6 million for the lower Alabama River rehabilitation project.

Last year, the association was assured that the long delayed lower Alabama River rehabilitation project could be supported by the in-house capability of the Corps of Engineers. The budget process, including the effects of Gramm-Rudman, evidently lessened that capability to the extent that the time-line for completion is extended yet farther into the future. This is after delays of up to 12 years.

This year we are requesting hard appropriations dollars, $6 million, in lieu of a statement of capability. The lower Alabama River is getting in pretty rough shape. There has been severe shoaling, threatening rock formations, and crumbling training dikes which combine to make the Alabama unreliable and inefficient. We cannot afford to delay this crucial project any longer.

Again, we are asking for this project to be funded so it can get underway. It has been planned, in time it is supposed to be, at most, a 2-year project.

I appreciate the time and consideration and I will pass to Mr. Clemens at this time.

Mr. CLEMENS. Hello, Senator Johnston, thank you for your time and your consideration.

I would like to set out by saying that we deeply appreciate the support of Senator Heflin and Senator Shelby. The are always great supporters of waterways.

I will donate my remarks in the interest of time, but I do want to say that to Coosa-Alabama people, Senator Johnston, that there is a certain kinship with the people around the Red River.

I think it is important. I compliment you and your colleagues, in the House and Senate, for having the foresight to be able to invest in the future of businesses and the people along the Red River in Louisiana.

To the same extent, we have that same feeling along the Coosa-Alabama. We have tried for years and years and years to get that Coosa River opened and we have come up with one obstruction after another. We aren't asking for funds, obviously, at this time, but what we are asking is for the restudying of the Coosa and its contribution to the national waterway system.

Thank you again for everything that you have done and for supporting us so far.

Remember, $6 million in the mid-term to keep that $220 million investment in the Alabama alive and well.

To the extent that you can help us, we would sincerely appreciate it, sir.

Senator JOHNSTON. Thank you, Mr. Clemens.

In addition to your two good Senators, Congressman Tom Bevill keeps us well aware of this project and what Tom Bevill wants on this committee, we pretty well go along with, as you know.

So, we are going to try to find a way to do what your good Senators and Chairman Bevill wants. We will try to find a way, you understand, the Corps and OMB are going in another direction, but where there is a will there is a way.

[The statements follow:]

STATEMENT OF J.T. (TOM) MCKENZIE, PRESIDENT, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION, INC.

I AM PLEASED TO HAVE THIS OPPORTUNITY TO TELL YOU WHAT WE FEEL IS NEEDED IN THE FISCAL YEAR 1989 ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR THE PROJECTS LISTED BELOW. AS THE PRESIDENT OF OUR ASSOCIATION I SPEAK FOR A LARGE AND DIVERSE GROUP OF CITIZENS WHO SEE CONTINUED DEVELOPMENT OF THE COOSA-ALABAMA WATERWAY AS AN OPPORTUNITY FOR GROWTH IN OUR REGION AND ALL OF THE NATION.

OUR MEMBERSHIP REFLECTS A BROAD RANGE OF CALLINGS AND PROFESSIONS; EACH WITH A WELL-DEFINED INTEREST IN WATERWAY DEVELOPMENT. SOME USE THE WATERWAY NOW, EITHER AS SHIPPERS OR TOW OPERATORS. OTHERS ARE BUSINESSMEN, BANKERS AND A VARIETY OF OTHER PRIVATE INDIVIDUALS WHO HAVE A STAKE IN FUTURE ECONOMIC DEVELOPMENT FOR THEIR FIRMS AND THEIR SUCCESSORS TO ENJOY. THEN THERE IS A LARGER GROUP OF ELECTED OFFICIALS AND THEIR CONSTITUENTS TYPICAL OF THE TWENTY-THREE MUNICIPALITIES AND NINETEEN COUNTIES ALONG THE WATER WHO ARE MEMBERS OF THIS ASSOCIATION. THESE PEOPLE WERE ELECTED - AS YOU WERE - TO LEAD; TO GOVERN NOW AND ALSO PLAN A BETTER FUTURE FOR THE CITIZENS THEY REPRESENT.

MR. CHAIRMAN, WE THANK YOU FOR THE SUPPORT YOUR COMMITTEE HAS GIVEN US IN THE PAST.

TABULATED BELOW ARE OUR SPECIFIC FUNDING REQUESTS FOR FISCAL YEAR 1989. THE PROJECTS WE SUPPORT ARE PART OF A WATERWAY SYSTEM THAT ORIGINATES IN NORTHWEST GEORGIA AND FLOWS DIAGONALLY ACROSS THE STATE OF ALABAMA TO MOBILE HARBOR. FOR COMPARISON PURPOSES WE INCLUDED THE AMOUNTS IN THE ADMINISTRATION'S BUDGET REQUEST.

PROJECTS	BUDGET REQUEST	OUR REQUEST
. LOWER ALABAMA REHABILITATION PROJECT		$ 6,000,000
OPERATIONS AND MAINTENANCE (O&M)		
. ALABAMA-COOSA RIVER, AL* (ALABAMA RIVER INCLUDING CLAIBORNE LOCK & DAM)	$ 2,381,000	4,538,000
. MILLERS FERRY LOCK & DAM, AL	3,100,000	3,388,000
. ROBERT F. HENRY LOCK & DAM, AL	2,800,000	2,904,000
. MOBILE HARBOR (INCL. CONSTRUCTION)	14,459,000	14,459,000
. ALLATOONA LAKE, GA	5,043,000	5,104,000
. CARTERS LAKE, GA	2,756,000	2,866,000
	$ 30,539,000	$ 39,259,000

*INCLUDES 72 MILES FROM THE MOUTH OF THE ALABAMA RIVER THROUGH CLAIBORNE LOCK AND DAM UP TO MILLERS FERRY. THE COOSA RIVER IS NOT IN-

YOU WILL NOTE THAT THE REQUEST FOR THE LOWER ALABAMA RIVER REHABILITATION PROJECT IS A NEW REQUEST IN THE AMOUNT OF SIX MILLION DOLLARS. THE REQUEST IS BROKEN DOWN INTO THE FOLLOWING CATEGORIES:

- TRAINING DIKE CONSTRUCTION AND RECONSTRUCTION	$ 5,580,000
- ROCK REMOVAL AND DREDGE REFERENCE PROFILE ADJUSTMENT	420,000
TOTAL	$ 6,000,000

LAST YEAR THE ASSOCIATION WAS ASSURED THAT THE LONG-DELAYED PROJECT COULD BE SUPPORTED BY THE IN-HOUSE CAPABILITY OF THE CORPS OF ENGINEERS. THE BUDGET PROCESS (INCLUDING THE EFFECTS OF GRAMM-RUDMAN) EVIDENTLY LESSENED THAT CAPABILITY TO THE EXTENT THAT THE TIME-LINE FOR COMPLETION IS EXTENDED YET FARTHER INTO THE FUTURE - THIS AFTER DELAYS OF UP TO 12 YEARS. THIS YEAR WE ARE REQUESTING HARD APPROPRIATIONS DOLLARS IN LIEU OF A STATEMENT OF CAPABILITY IN ORDER TO GIVE THE CORPS ADEQUATE FUNDS TO PRESS ON WITH THIS PROJECT. SEVERE SHOALING, THREATENING ROCK FORMATIONS AND CRUMBLING TRAINING DIKES HAVE COMBINED TO MAKE THE ALABAMA UNRELIABLE AND INEFFICIENT.

WE CANNOT AFFORD TO CONTINUE DELAYING THIS CRUCIAL PROJECT. AGAIN THIS YEAR, THE ASSOCIATION CONSIDERS THIS TO BE A PRIORITY PROJECT DESERVING THE SUBCOMMITTEE'S IMMEDIATE ATTENTION, MR. CHAIRMAN. MANY USERS ARE HESITANT TO USE THE RIVER BECAUSE OF THE POTENTIAL FOR DISASTER THAT EXISTS. WITH THE COMPLETION OF THE PROJECT, THE NINE-FOOT CHANNEL AVAILABILITY WILL BE INCREASED TO 95%, THE 8-FOOT CHANNEL WOULD BE AVAILABLE 99% OF THE TIME, AND THE 7-FOOT CHANNEL 100% OF THE TIME. PRESENTLY, THE CORPS OF ENGINEERS ARE DEVELOPING PLANS AND SPECIFICATIONS FOR CONTRACTING TRAINING DIKE REPAIR AND CONSTRUCTION. THE ASSOCIATION FORESEES A TWO-YEAR PROJECT AT MAXIMUM, PROVIDED ADEQUATE FUNDING AND ABSOLUTE PRIORITY ARE APPLIED TO THE EFFORT.

AS YOU KNOW, MR. CHAIRMAN, THE REMAINING TWO OBJECTIVES OF THE ASSOCIATION -- OPENING THE NAVIGATION CHANNEL BETWEEN MONTGOMERY AND ROME, GEORGIA ON THE COOSA RIVER AND DEEPENING OF THE MOBILE HARBOR -- STILL OCCUPY A POSITION HIGH ON OUR AGENDA.

WITH REGARD TO THE COOSA RIVER NAVIGATION PROJECT, LET ME SAY THAT THE APPROPRIATION IN THIS YEAR'S BUDGET FOR A REVIEW OF THE PROJECT STUDY IS CERTAINLY APPRECIATED. WE INTEND TO WORK CLOSELY WITH THE CORPS IN DEVELOPING A MEANS TO ADEQUATELY ASSESS THE FULL MEASURE OF POTENTIAL SHIPPERS WHICH WILL USE THE RIVER. I KNOW THAT YOU ARE AWARE OF THE NEED TO AVAIL ALABAMA AND GEORGIA OF THE ADDED USE OF THE COOSA FOR COMMERCIAL TRANSPORTATION. OUR EXECUTIVE VICE-PRESIDENT, RALPH CLEMENS, CONTACTED THE ANHEUSER-BUSCH ORGANIZATION IN ST. LOUIS SOME MONTHS AGO AND WAS TOLD THAT THE LACK OF A NAVIGATION CHANNEL WAS A DECIDED "MAJOR NEGATIVE" IN THE COMPANY'S DECISION NOT TO LOCATE IN EITHER GADSDEN OR ANNISTON! OUR MEMBERSHIP OFTEN ASKS HOW MANY POTENTIAL INDUSTRIES, UNKNOWN TO US, HAVE DECIDED AGAINST LOCATION IN THE BASIN SIMPLY DUE TO THE LACK OF INEXPENSIVE RIVER TRANSPORTATION. AS WE HAVE SAID SO MANY OTHER TIMES, SPENDING REDUCTIONS OR FREEZES ON INVESTMENTS MOST DIRECTLY LINKED WITH OUR COUNTRY'S FUTURE AVOID THE PROBLEMS SURROUNDING WATERWAY DEVELOPMENT ONLY BY IGNORING THEM, NOT SOLVING THEM. IF WE ARE REALLY INTERESTED IN MAKING AMERICAN INDUSTRY COMPETITIVE IN THE WORLD ARENA, A DIRECT AND LASTING METHOD WOULD BE TO LOWER TRANSPORTATION COSTS. TO DO THIS, THE GOVERNMENT MUST RECOGNIZE THAT WATERWAYS MUST BE IMPROVED PRIOR TO BUSINESS INTERESTS DECIDING ON MULTIMILLION DOLLAR INVESTMENTS. TO BELIEVE THAT A STRICT BENEFIT/COST RATIO FORMULA CAN BE THE ONLY CRITERION TO ESSENTIALLY APPROVE OR REJECT A PROJECT NEGLECTS THE REALISTIC VIEW OF TOO MANY SEASONED BUSINESS PEOPLE.

HAVING SAID THAT, THE ASSOCIATION IS GRATIFIED TO SEE THAT THE RED RIVER, A NON-DEVELOPED WATERWAY, IS BEING RECOGNIZED BY THE CONGRESS AS HAVING POTENTIAL FOR GREATNESS, IN SPITE OF WHAT COULD BE CALLED A "MARGINAL" BENEFIT/COST RATIO. THESE KINDS OF REASONED (AND REASONABLE) INVESTMENTS IN THIS COUNTRY'S TRANSPORTATION INFRASTRUCTURE SHOULD BE CONTINUED. IT IS IN ACCORDANCE WITH THAT LINE OF THINKING THAT WE WANT TO MAINTAIN CONGRESSIONAL INTEREST IN THE COOSA RIVER NAVIGATION PROJECT. ALABAMA AND THE UNITED STATES CANNOT AFFORD TO LET THE INDUSTRIES ALONG THE COOSA RIVER BE CONSIGNED TO A HISTORY OF ECONOMIC MEDIOCRITY!

ON A VERY POSITIVE NOTE, THE DEEPENING OF MOBILE HARBOR CONTINUES APACE, GIVING RISE TO A GREATER EXPECTATION OF INCREASED BUSINESS AT THE ALREADY IMPROVING PORT. WE, THE ASSOCIATION, ARE MOST PLEASED WITH THIS PROGRESS AS WELL AS THE SUPPORT WE CONTRIBUTED TO THIS EFFORT. WE KNOW THAT THE DEEPENING PROGRAM IS THE RESULT OF THE VERY PRODUCTIVE EFFORTS OF YOU AND YOUR COLLEAGUES IN BOTH HOUSES OF THE CONGRESS. FOR THAT WORK WE OFFER OUR MOST SINCERE APPRECIATION. WELL DONE!

THE MEN AND WOMEN WHO JOIN ME IN OFFERING TESTIMONY TODAY ARE LEADERS IN THEIR OWN RIGHT -- A SOLID AMALGAM OF PROFESSIONALS FROM INDUSTRY AND GOVERNMENT AS WELL AS INDIVIDUALS WHO HAVE HAD A LIFE-LONG DESIRE TO IMPROVE AND MAINTAIN OUR GREAT RIVER. THEY KNOW, INTUITIVELY, THAT THE NAVIGATION CHANNEL TO ROME IS AN ESSENTIAL INGREDIENT TO MAKING OUR INDUSTRY MORE COMPETITIVE. THE TENN-TOM WILL PAY ITS WAY, EVEN WITH ITS MODEST START, AND WITH THE COMPLETION OF

THE COOSA RIVER NAVIGATION PROJECT, THE STATE WILL BE TOTALLY SERVICED BY ECONOMICAL RIVER TRANSPORTATION. ADD TO THAT THE STRONG STATEMENTS OF SUPPORT FOUND IN OUR PACKAGE AND YOU WILL FIND A BROAD CROSS SECTION OF ALABAMIANS SAYING THAT THEY HOPE THAT YOU WILL LEND YOUR MIGHT AND CREDIBILITY TO ASSURE THAT THE FEDERAL GOVERNMENT WILL:

1. IMPROVE AND MAINTAIN THE ALABAMA RIVER, IN PARTICULAR THE REHABILITATION PROJECT MENTIONED EARLIER.

2. CONTINUE MAINTAINING AND DEEPENING THE MOBILE HARBOR.

3. OPEN THE COOSA RIVER FOR NAVIGATION.

THANK YOU FOR PROVIDING US WITH THE OPPORTUNITY TO SPEAK BEFORE THIS SUBCOMMITTEE. WE KNOW THAT YOU WILL RECEIVE OUR REQUESTS WITH BALANCE AND CONSIDERATION. OUR MEMBERS WHO HAVE SPENT TIME AND TREASURE TO APPEAR BEFORE YOU TODAY REPRESENT HUNDREDS OF OTHERS WHO, GIVEN THE OPPORTUNITY, WOULD DO LIKEWISE IN SPEAKING OUT IN FAVOR OF THESE VITAL PROJECTS. THANK YOU.

COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION'S DELEGATION
APPEARING BEFORE THE SENATE SUBCOMMITTEE ON APPRORPIATIONS
FOR ENERGY AND WATER DEVELOPMENT HEARINGS ON APRIL 11, 1988

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1. J. T. "Tom" McKenzie, President, CARI Association, Gadsden, AL
2. Mary George Waite, Vice Pres.-AL, CARI Association, Centre, AL
3. David J. Nolen, Mayor, City of Gadsden, Alabama
4. Walter B. Stevenson, Jr., AL DECA, Montgomery, Alabama
5. Ralph O. Clemens, Jr., Exec. Vice Pres., CARI Assoc., Montgomery
6. Otha Lee Biggs, Probate Judge, Monroe County, Monroeville, AL
7. Sue L. Glidewell, Mayor, Rainbow City, Alabama
8. Ralph Meade, President, Cherokee County Commission, Centre, AL
9. Sheldon L. Morgan, Sr. VP-FAB, Mobile, Alabama
10. Linda Carter, Peoples Telephone Company, Centre, AL
11. J. T. "Jamie" Jordan, Businessman, Centre, Alabama
12. Charlotte McKenzie, Housewife, Gadsden, Alabama
13. Florence Clemens, Businesswoman, Montgomery, Alabama
14. Aimee Clemens, Student-Auburn at Montgomery, Montgomery, AL
15. John A. Mixon, G/Mgr., Warrior&Gulf Navig. Co., Chickasaw, AL
16. John B. Dutton, Director, AL State Docks Department, Mobile, AL
17. E. G. Browning, G/Mgr.-Marketing, AL State Docks Dept., Mobile,AL
18. Richard T. "Pat" Dozier, Montgomery Marina, Montgomery, AL
19. Chris D. Thomas, Businesswoman, Washington, D. C.
20. Ada W. Paravicini, Adm. Asst., CARI Association, Montgomery, AL
21. Martin H. Mitchell, Chmn., Rome City Commission, Rome, GA
22. James H. Harrington, Rome City Commission, Rome, GA

23. Herbert Hicks, Chmn., Ind. Dev. Board, Attalla, AL
24. Billy Ray Williams, Commissioner, Etowah Co. Comm., Gadsden, AL
25. Roger Ellison, Engineer, Etowah County, Gadsden, AL
26. Juanita Moman, Moman's Optical, Gadsden, AL
27. Charlotte Nolen, housewife, Gadsden, AL
28. Buz (B.J.) Heggeman, Mobile Area C of C, Mobile, AL
29. Judge Jim Corley, Autauga Co. Commission, Prattville, AL

STATEMENT OF GOV. GUY HUNT OF ALABAMA

Dear Senator Johnston:

Once again I have the privilege of participating with the Coosa-Alabama River Improvement Association in soliciting your consideration of the association's request for the continued funding and operation of the federal water resources projects on the Alabama and Coosa Rivers in Alabama. The Alabama-Coosa Rivers serve multiple purposes including commercial navigations, hydropower generation, flood control, recreation, and water supply. Last year I reported to you concerning the impact of the drought of 1986. In this past year, we also experienced low water conditions, though not as severe as 1986. Again this year we are experiencing less than normal rainfall in the upper reaches of the basin. This could have an impact throughout the basin in coming months. Even with this rare event, the Alabama-Coosa Rivers continued, with very little interruption, in providing the many benefits of the system.

The continuation by the Corps of Engineers to rehabilitate existing river works, and the addition of new river works, especially in the lower reaches of the Alabama River and other appropriate modifications, should significantly improve the availability of the navigation channel under normal conditions and under stressed conditions such as occurred in the last few years. I request your support of these improvements to the navigation project.

Of upmost importance is our request to provide the financial resources in FY 1989 necessary to continue the operation and maintenance of federal projects on the Alabama-Coosa Rivers including the navigation facilities on the Alabama River, the hydroelectric facilities, and those portions of the project within Georgia on the Coosa River.

I join with the Coosa-Alabama River Improvement Association in requesting continued funding to evaluate methods to reduce the cost of the proposed Coosa River navigation project and the further evaluations of benefits of the project to the nation and the region.

The State of Alabama is aware of the importance of the Alabama-Coosa Waterway to the state and nation. To re-emphasize this importance I assigned, in June 1987, the Alabama Department of Economic and Community Affairs (ADECA) the principal role in regards to waterway development in the state. The ADECA has been meeting in recent months with waterway interests as represented by associations such as the Coosa-Alabama River Improvement Associations and with government agencies in an effort to further define the appropriate role for the state, especially in view of Public Law 99-662. We are working toward an enhanced partnership to respond to the opportunities that commercial navigation and water resources development can provide.

STATEMENT OF ALABAMA RIVER PULP CO., INC.

Alabama River Pulp Company, Inc is pleased to participate in the efforts to improve the Coosa-Alabama Waterway and maintain the Alabama River as a viable waterway.

As the Alabama River channel is improved, we will have the opportunity to expand our barging operations as much as economically possible to acheive lower transportation costs for incoming raw materials, fuels, supplies and outgoing finished product.

We produce bleached market kraft woodpulp both for the domestic and export market. In 1987 we barged no tons of outbound finished product but received 8725 tons of inbound of #6 Fuel Oil.

Over the last three years we have studied the economic feasibility of receiving steam coal by barge and barging finished woodpulp to our domestic customers in Wisconsin, Michigan, Ohio and the Northeastern part of the United States.

To date we have not received any steam coal by barge in 1987 due in part to the high capital investments required by our company necessary to install a coal receiving systems at our mill location.

Alabama River Pulp Company's steam coal usage is approximately 60,000 tons annually. Our domestic shipments of finished product considered for barging is approximately 100,000 tons to Wisconsin and Michigan customers and approximately 75,000 tons to customers in Ohio and Northeastern United States for a possible total barging volume of 175,000 tons that may be shipped via the Tenn-Tom Waterway.

Also it has been announced just yesterday that Alabama River Pulp's parent company, Parson's and Whittemore Inc. and Abitibi-Price Company the worlds leading producer of newsprint, have agreed in principle to form a joint venture for the production of newsprint.

This $320 million mill will be located next to our present pulp mill here in Monroe County on mile 69 of the Alabama River. It will produce approximately 200,000 tons of newsprint per year and employ between 150 to 200 permanent employees.

A portion of this 200,000 tons of newsprint may well be shipped to distribution centers by the inland waterway system if economically feasible.

It is our intent to use water transportation whenever economically possible because we predict this mode of transportation will experience the lowest rate of cost increase over the next five to ten years.

While the Alabama River has an authorized project depth of nine feet and at this level could be sufficient for the Alabama River Pulp Company's barge movement of pulp from the mill to our domestic customers in Wisconsin, Michigan and Ohio and the possible newsprint shipments from this site in the future. However this draft historically has been available to commercial traffic for only approximately nine months each year. An example would be during the late summer and early fall, there is a 90-100 day period of "low water" when the river depths are less than eight feet which restricts usable barge drafts to about seven feet. Conversely, a "high water" period in the spring months produces swift currents making navigation difficult on several critical and narrow bends.

The Corps' Mobile office is congnizant of the aforementioned problem facing commercial interest on the Alabama River and within their discretionary authority, has instituted studies aimed at corrective alternatives. Possible short intermediate term solutions being evaluated include: increased

regulation of water discharges at the Claiborne Lock and Dam which should partially mitigate the seasonal low water problem: modified operational procedures for the Jones Bluff and Millers Ferry projects (up-river) to capture and harness all available water flows above Claiborne: and, additional dikes and "training" structures on the lower river to further confine water-flows, thereby increasing depths in critical reaches of the waterway.

Should these alternatives prove to be ineffective in solving this long standing problem on the Alabama River, the Corps has also indicated that it may be necessary to seek funding, as to identify additional projects or authority needed from the Congress to increase the River's lowflows.

We are pleased to be located on the Alabama Waterway in Monroe County and look forward to the improvement of this vital waterway. We must all work together to converse our energy resources in the most efficient manner possible.

We respectfully request your concurrence and recommendation of funding being sought by the Coosa-Alabama River Improvement Association for fiscal year 1988.

Statement of Warrior & Gulf Navigation Co.

I am Nicholas J. Barchie, Jr., President of Warrior & Gulf Navigation Company. Our company is a member of the Coosa-Alabama River Improvement Association and thereby support the Association's funding requests for FY89.

Warrior & Gulf joins in a collective effort to improve the efficiency and reliability of the Coosa-Alabama System due to energy efficiency and lower costs are in the national interest as manufacturers and farmers compete in the world market to improve our balance of payments. Moreover, waterways provide a competitive alternative for shippers as well as efficient transportation productivity that lowers inflation and tends to ease upward pressure on the deficit.

Warrior & Gulf Navigation owns 27 towboats and 300 barges. Additionally, we operate one barge drydock at our Port Birmingham facility; one barge and one boat drydock at our Chickasaw facilities; and, a wholly owned subsidiary of WGN, Mobile River Terminal, is a bulk terminal handling various cargoes from and to ocean-going vessels in the Port of Mobile. We employ approximately 300 people.

Warrior & Gulf has been using the Alabama River for over ten years. The major limitation encountered on this river is severe shoaling during the summer months wherein the draft is restricted to 6 feet or less below Claiborne, thus requiring a very shallow draft vessel to perform towing. Therefore, continued rehabilitation and modification of the dredging profile for the Alabama River channel below Claiborne is a project which is long overdue for completion.

We respectfully request your support in this matter when your subcommittee considers appropriating funds for the Alabama River's FY89 operation and maintenance.

Resolution of Floyd County, Ga.

THAT WHEREAS, the Congress of the United States is again considering appropriations for the Fiscal Year 1989 for further work to make navigable the Alabama-Coosa River System from Mobile, Alabama to Rome, Georgia; and,

WHEREAS, the Coosa River Navigation Project is of particular concern to Floyd County, Georgia and this Board wishes to express its wholehearted support for the objectives of the Coosa-Alabama River Improvement Association; and,

WHEREAS, we urge your favorable consideration of the U. S. Corps of Engineers Fiscal '89 appropriation for this project; and,

WHEREAS, the operation and maintenance of the important upstream reservoirs and hydro-power plants at Allatoona and Carters Lake in Georgia are invaluable hydroelectric generating facilities; and,

WHEREAS, with the high unemployment in our area, and surrounding areas this project is even more vital to our sick economy and an investment in our future economic strength.

NOW, THEREFORE, BE IT RESOLVED, that this Board of Commissioners wish to go on record in support of the Coosa River Navigation Project.

Done in open meeting this 5th day of April, 1988.

FLOYD COUNTY BOARD OF COMMISSIONERS

C. T. Blankenship

C. T. BLANKENSHIP, CHAIRMAN

ATTEST:

Sue Broome

SUE BROOME, CLERK

STATEMENT OF DRAVO BASIC MATERIALS CO., INC.

We respectfully request your consideration and approval of the following projects on the Coosa-Alabama River System for fiscal year 1989:

1) Resume Coosa River Navigation Project.
2) Continued rehabilitation of training dykes and modification of dredging profile for the Alabama River.
3) Operation and maintenance - Claiborne Lock and Dam.
4) Operation and maintenance - Miller's Ferry Lock and Dam.
5) Operation and maintenance - Robert F. Henry Lock and Dam.
6) Operation and maintenance - reservoirs and hydro-electric stations.
7) Operation, maintenance, improvements and deepening of Mobile Harbor.

We support the testimony of the Coosa-Alabama River Improvement Association and we join the efforts of its membership to maintain and extend the waterway to make the benefits of low cost, energy efficient water transportation available to a broader economic base.

Dravo Basic Materials Company, Inc. is one of the leading producers of construction raw materials and aggregates on the Gulf Coast. We rely extensively on the waterways of Alabama, Florida, Louisiana, Mississippi and Texas for production and delivery of our products. In 1987 we produced and moved via Alabama waterways over 1,250,000 tons of sand and gravel. We also transported over 200,000 tons of limestone as well as significant quantities of other products. Our projections for 1989 are:

Sand and Gravel	1,350,000 tons
Other	500,000 tons

Dravo Basic Materials Company, Inc. operates a fleet of 23 boats, 85 barges and 7 dredges. We maintain a large terminal and handling facility on McDuffie Island in Mobile, Alabama in addition to numerous support facilities throughout South Alabama and the Gulf Coast.

The maintenance of authorized project dimensions is essential for the efficient, orderly production and delivery of materials throughout the waterway system. In order to provide this capability, it is imperative not only that the Army Corps of Engineers be provided with the appropriations as per their budget requests, but also with the additional funds required to insure the Corps has the flexibility and capability to fully realize the potential of the Coosa-Alabama River System and the Port of Mobile.

We sincerely appreciate the Committee's faith in the future of the great waterway systems of the State of Alabama and welcome its continued support of these vital projects.

STATEMENT OF JOHN B. DUTTON, DIRECTOR, ALABAMA STATE DOCKS DEPARTMENT

We again appreciate the opportunity to appear before this Committee along with our fellow Alabamians in support of navigation on the Alabama and Coosa Rivers. The Alabama River connects the heart of Alabama to the Gulf Port of Mobile and the Gulf Intercoastal Waterway and is an integral part of our State and national Inland Navigation System.

We would like to express our special thanks to you Mr. Chairman, along with your associates for your continued interest in and dedication to the great Waterway Systems of the United States.

The Alabama-Coosa River System provides an economical and energy effective method of transporting products and materials between the heartland of Alabama and the Port of Mobile, and contributes to the continued prosperity of our country by providing a major conduit for export and import of raw material as well as finished products.

The Alabama-Coosa System along with our great national Inland Waterway System greatly contributes to creating a highly competitive leverage in the nation's attempts at dealing with the balance of trade with other nations and provides a needed transportation artery for materials and products at the lowest cost possible.

The Alabama-Coosa System benefits commercial and industrial interests as well as agricultural interests in offering an economical method of transported products to world markets for nourishment and for sustaining a quality standard of life.

The Alabama State Docks Department joins with and supports Mr. Ralph Clemens, Executive Vice President of the Coosa-Alabama River System Association, as well as other members of the Association in their testimony on behalf of continued funding for the full-time operation and necessary maintenance of the Waterway System.

The State of Alabama has expended millions of dollars in support of navigation of the Alabama-Coosa System by providing the nonfederal support required. The Alabama State Docks Department within the last ten years has spent in excess of a quarter of a billion dollars in renovation, refurbishing, and new construction projects to place itself in a position to handle increased cargoes entering and exiting the Port which have previous or subsequent movement on the Inland Waterway Systems of Alabama.

We wholeheartedly support the individual project needs expressed by the Coosa-Alabama River Improvement Association, and in concert with the Association and the Governor of the State of Alabama, we again request funding for this vital navigation project.

STATEMENT OF REPRESENTATIVE BEN ERDREICH OF ALABAMA

Mr. Chairman, I appreciate the opportunity to make this statement of support for the budget request of the Coosa-Alabama River Improvement Association to allow the necessary maintenance and extension of the Alabama River channel. The association hopes to continue its efforts in maintaining the Alabama River as a viable waterway; in deepening the Mobile Harbor to accommodate the largest ocean-going vessels; and in opening the Coosa River for navigation. Much progress has already been made in achieving these objectives and I believe these efforts should be continued in full in the future.

I join this association and many others across Alabama in looking forward to continued efforts toward deepening the Mobile Harbor. Traffic on the Alabama and Tombigbee Rivers will continue to benefit greatly from this effort. This will enable more ships and larger ships to use the Port of Mobile. Along with improving the traffic on the Tennessee-Tombigbee, this augurs well for the future of water-borne commerce in our state and region.

I also look forward to the continued rehabilitation and added construction of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne. This project is one which is long overdue for completion.

Again, Mr. Chairman, my thanks to you and your subcommittee for all of your help on these important projects.

STATEMENT OF STATE REPRESENTATIVE RICHARD J. LINDSEY OF ALABAMA

Alabama is very appreciative of the support we have received from your committee in years past. At this time, we are requesting that you again support the budget request for fiscal year 1989 made by the Coosa-Alabama River Improvement Association, Inc.

I am extremely interested in seeing the Coosa River made navigable from Rome, Ga., to Montgomery, Ala. Before this project can become reality, it is imperative that the design and engineering work on the Coosa project be resumed. The opening of the Coosa would be an economic boom to northeast and northwest Georgia.

Again, thank you for your past support. If I can assist in any way on the state level, please let me know.

STATEMENT OF MISSISSIPPI CHEMICAL CORP.

Mississippi Chemical Corp. hereby states its full support of the Coosa-Alabama River Improvement Association. By copy of this statement, we join other users in collectively presenting to this committee our support for this organization and the importance of the waterway.

Mississippi Chemical is a manufacturer of commercial fertilizers and is a farmer-owned cooperative. In order to facilitate delivery of fertilizers to the farmers in a short timeframe and at the most economical cost, various storage/distribution facilities at strategic locations are utilized. One of these is on the Alabama River at Montgomery, with barge transportation being utilized in the placement of fertilizers at our Montgomery distribution facility. A freight savings is realized by using barge transportation over rail or truck. In today's highly competitive market, this savings is vital to the cost of fertilizers.

Annual shipments to Montgomery vary year to year due to river and market conditions. It is most important that the channel be maintained to its full navigable depth in order for the full potential of freight savings to be realized. Savings realized enable the company to lower its cost of manufacture/distribution, which is passed on to its farmer-customers in a lowered base price.

Your support of the waterway industry and your efforts for continued funding of the Coosa-Alabama Rivers is greatly appreciated.

STATEMENT OF FIRST ALABAMA BANK

This statement is rendered in behalf of the Coosa-Alabama River Improvement Association and requests for funding projects on both the Coosa and Alabama Rivers.

In 1983, the U.S. Army Corps of Engineers suspended design and engineering work on the Coosa project. We request that this work be resumed and funded in the fiscal year 1989 budget. Continued rehabilitation and added construction of training dikes and other modification is necessary on the Alabama River channel. Problems of navigation on the lower river have continued to plague us for many years. Remedial work needs to be done to attain greater efficiency of navigation. Operations and maintenance funding is requested to keep these programs going.

The Coosa-Alabama River Waterway continues to play a vital role in the economy of the region and the state of Alabama, serving industry and agriculture. We support the association request for fiscal year 1989.

STATEMENT OF DEGUSSA CORP.

Degussa Corp. strongly supports the efforts of the Coosa-Alabama River Improvement Association to secure congressional funding for water projects in Alabama for fiscal year 1989.

Of particular interest to us is the Mobile Harbor deepening project and the Coosa project. We believe that both projects will afford Degussa as well as other companies improvements in transportation at an overall reduction in cost.

Degussa Corp. has recently completed the construction of two major production units and have at least three others on the drawing board. Decisions to build these new units are based partly on competitive transportation costs and the availability of navigable waterways. Thus funding is necessary and should be continued.

STATEMENT OF CHILDRESS CO., INC.

We are writing in support of the Coosa-Alabama River Improvement Association's request for fiscal year 1989. This is a collective effort to maintain and extend the waterway.

The reliability of the river's channel depth is essential for operators and plant managers to divert more tonnage to the river system.These decisionmakers must balance the economics and safety with the reliability and trust of the river. Many times the plants existence hinges on the river's successful mode of transportation.

Waterways provide efficient transportation productivity that lowers inflation and reduces the national deficit. It has also enabled freight rates to be lowered, which gives our producers a better export market helping the trade balance. It had also provided a competitive alternative for shippers.

STATEMENT OF MACMILLAN BLOEDEL, INC.

MacMillan Bloedel, Inc., will be unable to attend your Appropriations subcommittee hearing on April 11, 1988.

However, MacMillan Bloedel, Inc., is a member of the Coosa-Alabama River Improvement Association and staunchly supports its efforts and programs. We feel that Coosa-Alabama River Improvement Association's funding requests for fiscal year 1989 are vital to the interests of MacMillan Bloedel, Inc. We join CARIA and its members and supporters in their efforts to improve and extend the Coosa-Alabama Waterway.

Historically, MacMillan Bloedel, Inc., has barged as much as 600,000 barrels of No. 6 fuel annually up the Alabama River to our Pine Hill, Ala., facility. In recent years, however, we have shifted the bulk of this to other transportation modes. One of the primary reasons for this shift was the problem of navigational certainty on the Alabama River. Improved channel depth and river flow would be major enhancements to barge transportation.

Your consideration of CRIA's funding requests for fiscal year 1989 is appreciated.

STATEMENT OF ROBERT M. CRESWELL, MEMBER, COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION

As a member of the Coosa-Alabama River Improvement Association, Inc., and as a former recreation and natural resources manager on the Alabama River, I support the association's request for fiscal year 1989 and I am part of a collective effort to maintain and extend the waterway.

It is essential that the rehabilitation of the training dikes, the construction of more dikes, and the modification of the dredging profile be funded for the maximum use of the waterway. The completion of the Tenn-Tom Waterway and the improvements being made in Mobile Harbor and the Alabama State Docks all require that the Alabama-Coosa be maintained and extended for the entire waterway system to flourish.

Likewise, the continued maintenance of the waterway from Mobile to Montgomery is a must for the continued servicing of industry in Alabama. The extensive commitment already made by industry in the belief that the waterway would be maintained make it obligatory that this be done. The Alabama River Pulp Co. (Parson & Whittemore) has just announced a joint venture with Abitibi of Canada to build a newsprint plant adjacent to the pulp mill.

STATEMENT OF THE ALABAMA-TOMBIGBEE REGIONAL COMMISSION

The Alabama-Tombigbee Regional Commission is pleased to submit a statement on behalf of the Coosa-Alabama River Improvement Association, Inc., in support of their request for fiscal year 1989 funding.

The Alabama-Tombigbee Regional Commission is a multicounty planning and development commission located in southwest Alabama. Our member governments include 10 counties and 47 municipalities. The Alabama-Tombigbee region is very rural with a land area of approximately 10,000 square miles. According to the 1980 Census, there are 225,600 residents of which 51 percent is black. Our communities are small, with all but one under 7,000 persons. In 1984, our per capita income ranged from a low of $5,707 to a high of $8,515, considerably below the state average of $9,987. Our state and nation continue to suffer unprecedented unemployment rates. The Alabama-Tombigbee region alone presently has an unemployment rate of 12.1 percent. Federal investments that create jobs are desperately needed to help alleviate the dire need for employment opportunities in our region and state.

It is vital that the Alabama River remain a viable waterway if our region is to overcome some of its economic problems. It is also of utmost importance that the schedule for the deepening of the Mobile Harbor be maintained.

Support for these projects by this subcommittee is desperately needed. The potential this project offers our region is tremendous. We urge Congress to realize the need for and support the Coosa-Alabama River Improvement Association's request for fiscal year 1989 funding.

Thank you for your consideration.

STATEMENT OF AGRICULTURAL SERVICES OF ALABAMA, INC.

This statement is written in support of the Coosa-Alabama River Improvement Association's efforts to improve the Alabama River as a viable waterway. We are located on the Alabama River in Montgomery, Ala.

Our operations consist of receiving barges of dry fertilizer, unloading the material into our facility, and then redistributing it to fertilizer dealers throughout Alabama and surrounding states. As you can see, our interest in the Alabama River is very extensive and justifiable.

We receive an average of 30,000 tons of product per year. This figure has remained stable over the past 5 years. However, last year we were not able to utilize our port facility to capacity because the Alabama River was too low to handle the barge traffic. This proved to be expensive to both us as well as the consumer.

During the history of our business, we have found that waterways provide the most efficient means of transportation. Any funding requests for fiscal year 1989 are justified and necessary. Please accept our sincere concern for the future as well as those needs expressed by those directly affected by the Alabama River.

Your consideration of this matter will be greatly appreciated.

STATEMENT OF KINPAK, INC.

Kinpak, Inc., in Montgomery, Ala., has an immense interest in the maintenance and improvements of the Alabama River for navigational purposes. Our company was strategically located in Montgomery in 1980, in part to take advantage of the efficient mode of transportation that is offered by a waterway.

Being a contract packager who uses the river to transport inbound raw materials, particularly ethylene glycol, it is important that we have a dependable and reliable waterway.

Currently this material is barged up the river and unloaded into our storage tanks at the Montgomery inland State Dock. Tonnage through this dock in 1987 was approximately 15,000 tons. Most of this activity occurs during the June through November period which usually coincides with the river being at its lowest depths. Because of this we have had to, at times, transport glycol by rail rather than water, thus decreasing the tonnage at the State Dock and usually at a higher cost.

Therefore, the reliability of the Alabama River does affect our attractiveness as a contract packager to existing customers as well as potential customers.

We were pleased to see the record of decision for the lower Alabama rehabilitation project signed in December. Our hope is that the funding will be made available and the project undertaken quickly. Kinpak is an active member of the Coosa-Alabama River Improvement Association, Inc., and we fully support the association's funding requests for fiscal year 1989.

Furthermore, we would like to submit this statement as part of a regional effort to maiantain and improve this vital waterway.

STATEMENT OF THE MONTGOMERY, ALA., INDUSTRIAL DEVELOPMENT BOARD

The Industrial Development Board of the city of Montgomery has been extremely active in contacting various industries requesting that they consider this area as a locality for a planned expansion, or as a site for the location of a new manufacturing facility, or as a regional distribution center.

We have encountered considerable problems in this area due to the freight differential, in cost, between rail and water shipments. These costs involve the raw materials brought into this state for use in manufacturing undertakings as well as costs incurred in the assemblage of products for distribution. Consequently, this board and this area of the state of Alabama are vitally interested in the development of the lower Alabama rehabilitation project, Mobile Harbor deepening-dredging, and the Coosa River navigation project—fiscal year 1989 and the necessary appropriations relative thereto.

It is our belief that the development and furtherance of the research and development of these three projects will be most beneficial to the economic development of this area and the state in attracting new and expanded manufacturing and distributing facilities. We support, and we request your assistance in securing the approval required to continue the studies and development of these projects.

In our solicitation of industries, we have come to the conclusion that it will be necessary that the Alabama River be maintained as a viable waterway to provide transportation for raw materials and finished products.

It is our sincere hope that you will actively and aggressively support the request we are making to insure the successful completion of the projects above referenced since it is our belief that such action will enhance the economic development of this area and will be beneficial to all residents of the state of Alabama and all of the Southeastern states.

STATEMENT OF THE UNION BANK & TRUST CO., MONTGOMERY, ALA.

We wanted to take this opportunity to say that we do support the Coosa-Alabama River Improvement Association's funding request for fiscal year 1989 and we are submitting this statement as part of our regional effort to improve and extend the Alabama River.

We consider the Alabama River to be a major transportation artery from Mobile to Montgomery. We have an office on the top floor of our building (the highest place in downtown Montgomery) overlooking the Alabama River and are pleased to show visiting businessmen an inland waterway map, provided to me by the association, showing the great current use and particularly the future potential of the Alabama River.

We do want to see that the reliability of the channel is improved so the river can reach its maximum potential as a major inland waterway. Accordingly, we hope that moneys will be appropriated for the operation and maintenance on dikes and dredging.

Again, our institution is a member of this association and supports its testimony before your commitee.

STATEMENT OF THE TOWN OF COOSADA, ALA.

We support the Coosa-Alabama River Improvement Association request for fiscal year 1989 and the association's efforts to maintain and extend the waterway.

We urge the resumption of the design and engineering work on the Coosa project.

STATEMENT OF MONTGOMERY MARINA, INC., MONTGOMERY, ALA.

As the operators of Montgomery Marina, Inc., at mile 288.3 on the Alabama River, we can see what the development of a dependable navigation channel has done for our economy in Montgomery.

This system cost less than $200 million to build and has created or contributed to private investment in industrial plants worth many times that amount.

The explosive recreational bonanza of which Montgomery Marina is a minor part, is best evidenced by the fact that boat sales in Montgomery alone have increased some 30-fold since 1980. This is only the bare beginning as Alabama joins in the Sun Belt push for excellence in education, tourism, industry, and life styles.

A modern transportation system—rail, highway, air, or waterway—cannot function without massive and continuous maintenance, repair, replacement, and improvement programs.

On the waterway these programs just happen to be less disruptive and more productive relative to the system's capacity than on any of the competing systems.

Despite 3 years of drought-induced law water, my downstream neighbor—Mississippi Chemical—has steadily increased its barge delivery. Upstream, Koppers has started barging their wood products—poles and ties, mainly—to places like St. Paul, Corpus Christi, and even Egypt.

Koppers is loading to 6-foot depths here in Montgomery and highway hauling the rest of the load to a point below the Claiborne bottleneck. The waterway is working in spite of the protracted drought which would certainly close most other systems.

The Coosa-Alabama is turning out to be a remarkably profitable investment.

STATEMENT OF THE CITY OF GADSDEN, ALA.

Thank you for allowing us to express our support for the association's requests for fiscal year 1989 as part of a collective effort to maintain and extend the waterways.

It would be a great benefit to our area for the design and engineering work on the Coosa project, which was suspended in 1983, to be resumed. Another project which is long overdue for completion is the rehabilitation and added construction of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne. Also, we would like to see the continuance of the operation and maintenance

of the upstream reservoirs and hydropower plants at Alltoona and Carters Lake in Georgia.

Waterways provide efficient transportation productivity that lowers inflation and reduces the nation's deficit. A public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole. Studies of completed waterways such as the Arkansas, the Gulf Intracoastal Waterway, and also of the planned Coosa project, show that the returns fully justify the investment.

We are planning to participate as part of the delegation attending the hearings on the fiscal year 1989 budget.

Statement of the Cherokee County (Ala.) Commission

The Cherokee County Commission requests the Alabama Coosa River navigation project be given your every consideration. We would like to see the design and engineering work resumed. We feel this project would be a boost to the economy of our area and the nation. Our region is predominantly agricultural and this project could be a boost to both agriculture and industry.

Thank you for your help and we appreciate your years of work and interest in the project.

Statement of Rome (Ga.) City Commission

The citizens of Rome, Ga., would like to file the following statement of support,

We believe that water-based transportation is an essential and integral part of the national transportation system. It will have an increasing significance in future years because it requires less fuel and less labor per ton-mile when compared to other transportation modes.

It is our view that these projects are not an expense to this nation; they are an investment in our economic development and future.

Therefore, we would like to state our support for the following activities in the Coosa-Alabama River area:

1. Resume design and engineering work on the Coosa project, which was suspended in 1983.
2. Begin rehabilitation of the training dikes and modification of the dredging profile for the Alabama River channel below Claiborne.
3. Continue maintenance and operation of the Alabama River Waterway from Mobile to Montgomery.
4. Continue operation and maintenance of the upstream reservoirs and hydroelectric powerplants at Allatoona and Carters Lake in Georgia.
5. Maintain, and improve by deepening, the Mobile Harbor.

We further feel that a public policy decision to invest in an underdeveloped region like the Coosa Valley would strengthen the nation as a whole.

On behalf of the citizens of Rome, I wish to thank you in advance for your consideration of these matters.

Statement of Monroeville (Ala.) Area Chamber of Commerce

The Monroeville Area Chamber of Commerce, Monroe County, Ala., respectfully submits this statement of support for the continued development of the Coosa-Alabama River navigation project. We hereby support fiscal year 1989 appropriations requests as submitted to the Congress by the U.S. Corp of Engineers.

In order for this area of the United States to receive the maximum economic benefits from the use of the Coosa-Alabama River systems, it will be necessary to resume, design, and engineer work on the Coosa project, which was suspended in 1983. For industry to locate along this river system and utilize the portion of the Alabama River already completed for navigation, it is necessary that maintenance and rehabilitation, to include dredging of that portion of the Alabama River from Montgomery to Mobile, as well as maintaining the schedule for the Mobile Harbor deepening project.

On March 21, 1988, a $360 million newsprint mill was announced by Parsons and Whittemore and Abitibi Price, for construction on the Alabama River near Claiborne, Monroe County, Ala. This is another example of the importance of river development to the economic growth of this area of the United States.

Your favorable consideration to fiscal year 1989 appropriations requests to continue the development of the Coosa-Alabama River system is greatly appreciated.

Statement of City of Monroeville, Ala.

The City Council of Monroeville, Monroe County, Ala., respectfully submits this statement of support for the continued development of the Coosa-Alabama River navigation project. We hereby support fiscal year 1989 appropriations requests as submitted to the Congress by the U.S. Corp of Engineers.

In order for this area of the United States to receive the maximum economic benefits from the use of the Coosa-Alabama River systems, it will be necessary to resume, design, and engineer work on the Coosa project, which was suspended in 1983. For industry to locate along this river system and utilize the portion of the Alabama River already completed for navigation, it is necessary that maintenance and rehabilitation, to include dredging of that portion of the Alabama River from Montgomery to Mobile, as well as maintaining the schedule for the Mobile Harbor deepening project.

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Your favorable consideration to fiscal year 1989 appropriations requests to continue the development of the Coosa-Alabama River system is greatly appreciated.

Statement of Monroe County (Ala.) Commission

The Monroe County Commission, Monroe County, Ala., respectfully submits this statement of support for the continued development of the Coosa-Alabama River navigation project. We hereby support fiscal year 1989 appropriations requests as submitted to the Congress by the U.S. Corp of Engineers.

In order for this area of the United States to receive the maximum economic benefits from the use of the Coosa-Alabama River systems, it will be necessary to resume, design, and engineer work on the Coosa project, which was suspended in 1983. For industry to locate along this river system and utilize the portion of the Alabama River already completed for navigation, it is necessary that maintenance and rehabilitation, to include dredging of that portion of the Alabama River from Montgomery to Mobile, as well as maintaining the schedule for the Mobile Harbor deepening project.

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Your favorable consideration to fiscal year 1989 appropriations requests to continue the development of the Coosa-Alabama River system is greatly appreciated.

Statement of Farmers & Merchants Bank, Centre, Ala.

We strongly support the Coosa-Alabama River Improvement Association's funding requests for fiscal year 1989 in an effort to improve and extend the waterway.

Waterway users continue to have to pay a special tax on diesel fuel which really hurts our farmers to have to pay this added tax. Also, we need to have lowered freight rates because it will give our producers a better export market, which will help the trade balance. Since we live in an agricultural area, the lowered freight rates and the deletion of this special tax on diesel fuel would certainly be beneficial to the farmers.

We hope that money can be provided in the operations and maintenance area for improved reliability of the channel, so the Alabama River can reach its potential as a major inland waterway.

STATEMENT OF CHEROKEE COUNTY (ALA.) CHAMBER OF COMMERCE

The Cherokee County Chamber of Commerce supports the Coosa-Alabama River Improvement Association's request for fiscal year 1989 and we are part of a collective effort to maintain and extend the waterway. We urge you to resume design and engineering work on the Coosa project, which was suspended in 1983.

Studies of completed waterways such as the Arkansas, the Gulf Intracoastal Waterway, and also of the planned Coosa project, show that the return fully justify the investment.

On behalf of the Chamber of Commerce, please support the fiscal year 1989 project.

STATEMENT OF MONTGOMERY AREA (ALA.) CHAMBER OF COMMERCE

One of the prime goals and purposes for the organization of the Montgomery Area Chamber of Commerce in 1882, was to establish a navigable channel on the Alabama River from Montgomery to Mobile. This project has been pursued ever since and was reorganized, reactivated, and successfully pursued from the mid-1950's to the present date, as the Coosa-Alabama River Improvement Association. We call on you now to continue, expand, and increase the use and the potential of this national and vital waterway.

Continued federal maintenance and operations of the Alabama River Waterway from Montgomery to Mobile is essential. The Montgomery Area Chamber of Commerce is particularly interested in the implementation of the lower Alabama rehabilitation project, which will ensure that the Alabama River will continue to be safely and efficiently navigable to the Gulf of Mexico. Other projects worthy of your attention are the Mobile Harbor deepening-dredging and the Coosa River navigation project for fiscal year 1989.

I think a valid point, also, is that waterways provide efficient transportation productivity that lowers inflation and reduces the national deficit.

It seems to us that projects such as ours, which are underway and vital to the region and the nation, that help the nation's economy, and that give the taxpayers a good return on their investment, are something we can ask your assistance for with every confidence that they are worthy of your full and complete support.

STATEMENT OF JAMES T. JORDAN, CENTRE, ALA.

We strongly support the Coosa-Alabama River Improvement Association's funding requests for fiscal year 1989 in an effort to improve and extend the waterway.

I am a farmer and the special tax on diesel fuel that is paid, in my opinion, really hurts the farmers. Also, we need to have lowered freight rates because it will give our producers a better export market, which will help the trade balance. Since this is an agricultural area in this part of Alabama, the lowered freight rates would certainly be beneficial to us all, especially the farmers.

We hope that money can be provided in the operations and maintenance area for improved reliability of the channel, so the Alabama River can reach its potential as a major inland waterway.

STATEMENT OF SOUTHERN COMPANY SERVICES, INC.

Southern Company Services, Inc., on behalf of Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company supports the Coosa-Alabama River Improvement Association and its president in their efforts before your committee. Although at present, the Southern electric system does not use the Coosa-Alabama River to deliver coal to our system plants, a number of our electric generating facilities are located on or near the river. We depend on this river system for cooling water at fossil fueled plants as well as generating hydroelectric power. In addition, the Coosa-Alabama River is located in the geographic center of our service area.

The Southern electric system is particularly interested in continuing Federal maintenance and operation of the Alabama River waterway from Mobile to Montgomery and maintaining the schedule for the Mobile Harbor Deepening Project. To our system companies, waterways provide efficient transportation productivity that ultimately should lower inflation and help to reduce our national trade deficit. It also lowers rail freight rates as waterways serve to provide a healthy competitive alternative for rail shippers. In addition, extensive commitments to private investment on navigable waterways have been made on the assumption that Federal maintenance and operation of the waterways would be continued.

Lastly, the Port of Mobile is the hub of the Central Gulf Coast and the continued development of its facilities and the river systems feeding into it are vital for its growth. It is for these reasons that we support a program of constant maintenance and upgrading of the Coosa-Alabama River system and the Association's request for FY89 appropriations.

MISSOURI AND KANSAS WATER PROJECTS

STATEMENT OF MARK BRYANT, COUNCILMAN, FEDERAL LEGISLATIVE LIAISON, KANSAS CITY, MO, REPRESENTING MO-ARK ASSOCIATION

ACCOMPANIED BY:

JIM MEITL, GENERAL MANAGER, WATER DISTRICT NO. 1
RICHARD BECKER, MAYOR, LENEXA, KANS.
GURNIE GUNTER, CITY ENGINEER, KANSAS CITY, MO.

Senator JOHNSTON. Our final witness of the day is Councilman Mark Bryant of Kansas City, Mo., representing the MO-ARK Association of Missouri and numerous Missouri and Kansas projects.

Mr. BRYANT. Thank you, Mr. Chairman.

My name is Mark Bryant and I am a member of the city council of Kansas City, Mo. I am pleased to be joined here today by Jim Meitl, who is the general manager of Water District No. 1; Richard Becker, who is the mayor of Lenexa, Kans.; and Gurnie Gunter, who is the city engineer for Kansas City, Mo.

Mr. Chairman and members of the subcommittee, I am not only speaking on behalf of the city of Kansas City, Mo., but I am also speaking in support of the projects of our sister cities and counties in our greater Kansas City area.

We deeply appreciate the fact that Congress responded favorably to our fiscal year 1988 water resource needs and appropriated funds for four flood control projects that are absolutely essential to the citizens of Kansas City.

Those projects are: the Blue River project, the Blue River study, the design engineering for completion of plans for a 1990 start on the construction of the Brush Creek project, and studies on the Turkey Creek basin for economically feasible measures.

My purpose here today is to request that you continue our partnership to insure that these projects which are key to the continued economic growth of Kansas City receive the funding they need. Kansas City requests this same support for the other projects in Missouri and Kansas for which the MO-ARK delegation is testifying today.

The city of Kansas City, Mo., as well as Overland Park, Kans.; Kansas City, Kans.; and others in the greater Kansas City area are working together to provide the local share for all of these projects.

To improve our ability to match future federal funding, we are continuing our efforts to form a metropolitan stormwater district within our Mid-America Regional Council. Our goal is to raise funds for intergovernmental stormwater and flood control improvements and provide an institutional framework for bistate cooperation.

All of the projects that we have proposed for further funding have been chronic problems for a number of years and are worthy of your continued support. We are pleased with the progress, but, of course, are looking forward to the day when construction is complete and we both can reap the economic benefits of our joint efforts. We will continue to work with and cooperate with the Corps of Engineers to complete the work in a timely fashion.

Blue River Channel, Mo.

The Blue River channel project has moved forward. Two contracts are complete and a third contract is about to be started. This is a complex project and we are extremely pleased with the project management and construction. I wish to compliment the Corps of Engineers. The design of the next two phases has started and construction is scheduled to continue uninterrupted through completion of the project.

In the meantime, we are continuing to relocate railroad tracks and purchase the needed right-of-ways. This year's federal appropriation is needed to sustain that new momentum.

The study of the Upper Blue River is ready to move forward. The reconnaissance report with alternative solutions has been presented for our review and we have concurred in the recommendations. We have committed ourselves to enter into a cost-sharing agreement for a feasibility study this year. We are currently working out the details with the Corps of Engineers.

Turkey Creek Basin Study

The restudy of the Turkey Creek basin is considering interim solutions for a protection system against frequent flooding. Turkey Creek lies in two states, three counties, and affects both commercial and residential properties. Both cities have passed resolutions of support for the restudy. We have agreed to jointly sponsor a corrective project which the study deems to be economically feasible.

The reconnaissance report indicated that there are solutions. The Corps of Engineers is ready to perform the feasibility study. We will work together closely to develop the solutions that will solve this serious problem.

BRUSH CREEK, KANS., PROJECT

Brush Creek is where high water resulted in death and destruction in Kansas City during a record flood of September 1977. This project is a showcase on how local, state, and federal governments can cooperate for a beneficial project on a more equitable cost basis.

In the case of Brush Creek, the city is to finance $24 million out of an estimated $36 million flood control project. This project will afford flood protection for a 2½-mile stretch from state line to woodland. The city has already spent $1.8 million to replace the Wornall Road bridge across Brush Creek and has allocated $300,000 for shared design costs on the project.

As you know, the federal portion of the overall project is only $12 million because only $16 million of the total project qualified under the NED formula. The city will pick up its share of the local cost of that project, approximately $4 million, as well as finance the remaining flood control efforts on each end of the federal project.

As a result of this overall project, we expect a benefit of over $60 million in savings from flood damages in the future. This project is also being viewed as a catalyst for economic development east of our largest commercial area, the Country Club Plaza. Without the flood control, however, the plaza will remain in jeopardy and no additional growth can occur.

Everywhere I go, I tell everyone that Kansas City is on the move. We want a city that not only the citizens of Kansas City can be proud of, but this whole nation can be proud of. We need your help. We both will benefit from your help. We urge your continued realistic support of these projects and thank you very much for your consideration this afternoon.

With that, Mr. Chairman, if you would indulge us and give a few moments for the mayor of Lenexa, Kans., to make a few comments, we would greatly appreciate it.

Senator JOHNSTON. Mayor.

Mr. BECKER. Mr. Chairman, thank you for your time and consideration.

I am Rich Becker, the mayor of Lenexa, Kans. Lenexa is a rapidly growing city of 31,000 located on the Kansas side of the Kansas City, Mo., metropolitan area. Lenexa is a leading member of the MO-ARK Association as evidenced by my attendance at this subcommittee hearing today, as well as the fact that the president of our organization is Lenexa City Administrator David Watkins.

MO-ARK is a strong advocator of intergovernmental cooperation and promotes metropolitanwide support for infrastructure improvements that benefit the entire metropolitan area.

With this in mind, our city and MO-ARK strongly support the fiscal year 1989 budget requests for the projects—the Blue River channel im-

provements, from 63rd Street north to the Missouri River; the Harry S. Truman Dam and Reservoir generator improvements; the general investigation studies of the Blue River basin, adjacent to Dotson Industrial Park; and the Turkey Creek watershed project in Kansas City, Kans., and Kansas City, Mo.; the Brush Creek preconstruction engineering and design; and continued work on the Little Blue River lakes project.

I am a very strong supporter of metropolitan support for infrastructure improvements. While Lenexa stands to benefit little directly from these improvements, there is no question that there is tremendous indirect benefit to our city. The Brush Creek project, Blue River improvements, and Turkey Creek study will all make the Kansas City area more attractive and a safer place to live and to work.

I strongly encourage this subcommittee to give approval to these funding requests in their deliberations for fiscal year 1989, and I thank you very much for this time.

Senator JOHNSTON. Thank you very much, Mayor.

Thank you, Mr. Bryant.

I am familiar with the MO-ARK Association. A few years ago I went down and made a speech to that group, so I am familiar with your projects. I know your problems down there.

I wish we had a little more money to go around with this committee, but I know about your projects and all I can tell you is we will look at them very sympathetically because we understand their importance to both of your cities and that whole region.

Thank you very much gentlemen.

[The statements follow:]

STATEMENT OF MARK BRYANT, MEMBER, KANSAS CITY, MO., CITY COUNCIL

I am Mark Bryant, member of the City Council and Federal Legislative Liaison, of Kansas City, Missouri. Today I am not only speaking on behalf of my City but I am also speaking in support of the project of our sister cities and counties in our Greater Kansas City area.

We deeply appreciate the fact that Congress responded favorably to our FY '88 water resource needs and appropriated funds for four flood control projects that are absolutely essential to the citizens of Kansas City, Missouri. Those projects are:

1. The Blue River project - mouth to 63rd Street.

2. The Upper Blue River Study.

3. Design engineering for the completion of plans for a 1990 start on construction of the Brush Creek project.

4. Studies on the Turkey Creek basin for economically feasible measures.

My purpose here today is to request that you continue our partnership to insure that these projects which are key to the continued economic growth of Kansas City receive the funding they need. Kansas City requests this same support for the other projects in Missouri and Kansas for which the MO-ARK Delegation is testifying today.

The City of Kansas City, Missouri, as well as Overland Park, Kansas, Kansas City, Kansas, and others in the greater Kansas City area are working together to provide the local share for all of these projects. To improve our ability to match future federal funding, we are continuing our efforts to form a metropolitan stormwater district within our Mid-America Regional Council. Our goal is to raise funds for intergovernmental stormwater and flood control improvements and provide an institutional framework for bi-state cooperation.

All of the projects that we have proposed for further funding have been chronic problems for a number of years and are worthy of your continued support. We are pleased with the progress, but of course are looking forward to the day when construction is complete and we both can reap the economic benefits of our joint effort. We will continue to work with and cooperate with the Corps of Engineers to complete the work in a timely fashion.

The Blue River Channel project has moved forward. Two contracts are complete and a third contract is about to be started. This is a complex project and we are extremely pleased with the project management and construction. We wish to compliment the Corps of Engineers. The design of the next two phases has started and construction is scheduled to continue uninterrupted through completion of the project. In the meantime, we are continuing to relocate railroad tracks and purchase the needed rights-of-way. This year's federal appropriation is needed to sustain that new momentum.

The study of the Upper Blue River is ready to move forward. The reconnaissance report with alternative solutions has been presented for our review and we have concurred in the recommendations. We have committed ourselves to enter into a cost sharing agreement for a feasibility study this year. We are currently working out the details with the Corps of Engineers.

The restudy of the Turkey Creek basin is considering interim solutions for a protection system against the frequent flooding along Southwest Boulevard in Kansas City, Missouri, and Kansas City, Kansas. Turkey Creek lies in two states, three counties, and affects both commercial and residential properties. Both cities have passed resolutions of support for the restudy. We have agreed to jointly sponsor a corrective project which the study deems to be economically feasible. The reconnaissance report indicated that there are solutions. The Corps of Engineers is ready to perform the feasibility study. We will work together closely to develop the solutions that will solve this serious problem.

Brush Creek is where highwater resulted in death and destruction in Kansas City during a record flood of September, 1977. This project is a showcase on how local, state, and federal governments can cooperate for a beneficial project on a more equitable cost basis.

In the case of Brush Creek, the City is to finance $24 Million out of an estimated $36 Million flood control project. This project will afford flood protection for a two and a half mile reach from State Line to Woodland. The City has already spent $1.8 Million to replace the Wornall Road bridge across Brush Creek and has allocated $300,000 for shared design costs on the project. As you know, the federal portion of the overall project is only $12.0 Million because only $16.0 Million of the total project qualified under the NED formula. The City will pick up its share of the local cost of that project (approximately $4.0 Million), as well as finance the remaining flood control efforts on each end of the federal project. As a result of this overall project, we expect a benefit of over $60.0 Million in savings from flood damages in the future. This project is also being viewed as a catalyst for economic development east of our largest commercial area, the Plaza. Without the flood control, however, the Plaza area will remain in jeopardy and no additional growth can occur.

Everywhere I go I tell everyone that Kansas City is on the move. We want a city that not only the local citizens are proud of, but one that the nation as a whole is proud of. We can only accomplish that through a continued cooperation with you and others in federal government. We need your help! We both will benefit from that help. We urge your continued realistic support of these projects and thank you very much for your consideration.

MO-ARK ASSOCIATION

SUMMARY OF FISCAL YEAR 1989 REQUEST

	GENERAL INVESTIGATION	REQUEST AMOUNT
1.	Blue River Basin, Kansas City, Missouri Dodson Industrial Park Area	$145,000
2.	Turkey Creek Watershed Kansas and Missouri Sides	$170,000
	PRECONSTRUCTION ENGINEERING AND DESIGN	
	Brush Creek Project	$390,000
	CONSTRUCTION GENERAL	
	Blue River Channel	$9,116,000
	Harry S. Truman Dam & Reservoir	$6,445,000
	Little Blue River Lakes	$3,017,000
	Missouri River Levees	$350,000

STATEMENT OF RICH BECKER, MAYOR, LENEXA, KANS.

I am Rich Becker, Mayor of Lenexa, Kansas. Lenexa is a rapidly growing city of 31,000 people located on the Kansas side of the Kansas City, Missouri, metropolitan area. Lenexa is a leading member of the MO-ARK Association, evidenced by my attendance at this subcommittee hearing, as well as the fact that the President of the organization is Lenexa City Administrator, David Watkins. MO-ARK is a strong advocate of intergovernmental cooperation and promotes metropolitan-wide support for infrastructure improvements that benefit the entire metropolitan area. With this in mind, our City and MO-ARK strongly support Fiscal Year 1989 budget requests for the following projects:

1. Blue River channel improvements from 63rd Street north to the Missouri River ($9,116,000).
2. Harry S. Truman Dam and Reservoir turbine generator improvements ($6,445,000).
3. General investigation studies for the Blue River Basin adjacent to the Dodson industrial park ($145,000), and Turkey Creek Watershed project in Kansas City, Kansas, and Kansas City, Missouri ($170,000).
4. Brush Creek preconstruction engineering and design ($390,000).
5. Continuod work on the Little Blue River Lakes project ($3,017,000).

Our City has been participating in an effort by the Mid-America Regional Council (MARC) to address stormwater needs in the metropolitan area. Currently there are efforts on both sides of the state line to promote legislation allowing for metropolitan-wide funding for storm drainage improvements that benefit the entire area. The combination of local funding and federal funding should help address the stormwater needs of the area. In addition, the above mentioned projects will all increase the economic vitality of the area as well as enhancing the quality of life. Of particular importance are the Turkey Creek project study and the Brush Creek flood control project. Brush Creek traverses a unique residential and commercial

area of Kansas City known as the Country Club Plaza. This area is a tremendous amenity to the entire metropolitan area. In 1977 a devastating flood took many lives and caused millions of dollars in property damage. The funding of the 1989 request will bring this project one step closer to reality. The Turkey Creek project involves a study of the entire Turkey Creek Watershed which stretches from Lenexa, Kansas, northeastward to Kansas City, Missouri. There have been numerous flooding problems along this creek in recent years, particularly in the commercialized Southwest Boulevard area. The City of Lenexa and MO-ARK strongly support the funding of this study as a preliminary step to eventual construction of a flood control project to alleviate flooding in this area.

Finally, I am a strong supporter of metropolitan support for infrastructure improvements. While Lenexa stands to benefit little directly from these improvements, there is no question that there is a tremendous indirect benefit to our City. The Brush Creek project, Blue River improvements, and the Turkey Creek study will all make the Kansas City area a more attractive and safer place to work and live. I strongly encourage this subcommittee to give approval to these funding requests in the deliberations of the Fiscal Year 1989 budget.

Thank you.

STATEMENT OF JOHNSON COUNTY, KANS., WATER DISTRICT NO. 1

My name is Ron Gullickson and I am a member of the Board of Directors of Water District No. 1 of Johnson County, Kansas. Water District No. 1 is a major water utility in the greater Kansas City metropolitan area that serves approximately 240,000 residents.

I am speaking today on behalf of the Board of Water District No. 1 in my capacity as Chairman of the Long Range Planning Committee; and I am here to lend our support to the projects that have been presented to you in previous testimony.

A number of these projects will not have an immediate bearing on our District's customers or will not benefit them directly. However, as a supportive neighbor of the state of Missouri and of the city of Kansas City, Missouri, we recognize the positive impact these projects will ultimately have on our entire metropolitan area and state as well.

Our District has been a member of Mo-Ark since 1951, and we are proud to have been a part of the worthwhile efforts of this organization through the years. They have a rich history and have proven their dedication to the betterment of their communities through their works. Mo-Ark has been instrumental in bringing about a number of projects that have had a positive influence on both the Kansas and Missouri Rivers. We, as a water district, are deeply concerned about the quality of water in both the Kansas and Missouri River Basins. Through their previous projects, Mo-Ark has helped control flooding along these rivers and helped maintain the quality of water in them.

Projects such as the ones you've heard about today can serve only to benefit our city and community and the nation as well. With neighboring communities working together to solve problems of mutual concern to them, the overall result cannot help but be stronger.

Your continued support is needed for the successful completion of the important projects we have been discussing today. Through our shared efforts and commitments, we all stand to gain.

Your support of these projects in the past has made a difference for the better. Mr. Chairman and members of the subcommittee, we request your continued support and consideration. Thank you.

STATEMENT OF GREATER KANSAS CITY, MO., CHAMBER OF COMMERCE

Mr. Chairman, I am John Madgett and I am appearing on behalf of the Mo-Ark Association and as the Chairman of the Water Resources Committee of the Greater Kansas City Chamber of Commerce.

Your Committee last year authorized funds for the continuation of the Brush Creek study, which, upon completion of the project, will eleviate recurring and unnecessary loss in the Brush Creek area. A loss that includes both public and private resources, and human lives. Those funds were authorized and are very much appreciated. We are here to express our appreciation and to request that the funds for Brush Creek be authorized to move on to the Preconstruction Engineering and Design phase of the project.

Part of the funds appropriated were for the study of Turkey Creek. Although the headwaters of Turkey Creek and Turkey Creek Basin (which represents a twenty-three square mile area) are in Johnson and Wyandotte counties in Kansas, there are severe restrictions in the Turkey Creek channel, resulting in heavy flooding in Missouri along Southwest Boulevard where many small businesses are located.

With Kansas City, Kansas and Kansas City, Missouri agreeing to pay half the cost of future studies, the feasibility phase could be initiated, and our organizations agree that the most likely project to be recommended would consist of channel and bridge modifications on the lowermost two miles of Turkey Creek.

As Past-President of the Missouri Arkansas Flood Control Association, who have appeared before your Committee for the past thirty-six years, I would like to respectfully ask the Congress to appropriate the monies to continue and complete the funding capabilities of the Corps of Engineers in the Kansas City District for the fiscal year 1989.

STATEMENT OF DAVID M. MILLS, MAYOR, ARKANSAS CITY, KANS.

In 1986 the Arkansas City, Kansas, Flood Control Project, based on a study by the Tulsa Corps of Engineers Office dated May 1984, was authorized by Congress. This authorization followed a near "over topping" of the levee surrounding our community from the Arkansas and Walnut Rivers in October of 1985. This incident threatened the lives of some 4,100 persons living in the flood plain of Arkansas City as well as property estimated to value $437,000,000. It also threatened much of the economic "life blood" of Arkansas City, since over 1100 of the city's industrial jobs are in the flood plain. We are extremely concerned that this project move forward and that the City not suffer a catastrophic incident before it is completed!

Arkansas City is a community of 13,200 people, established in 1870, at the junction of the Arkansas and Walnut Rivers. The City itself has grown to the north in a linear fashion between the two rivers. Currently there are seven (7) miles of levee protecting the community, three (3) miles on the Walnut and four (4) miles on the Arkansas which protect the community. However, these levees are woefully inadequate in terms of height. Also, the structural stability of the sand levee on the Arkansas River is a major concern. The project would install a higher levee elevation and stabilize the Arkansas River levee with a clay earth cap. It would also dredge certain downstream portions of the Walnut River as it intersects with the Arkansas River to provide for improved stream flow.

Current Corps estimates anticipate a total cost of $15,000,000 with a Federal share of $11,200,000. The benefit to cost ratio based on existing property values and industry operations is 2.4. We are currently asking for funds to begin the initial engineering phase of the project. The corps request for FY 1989 is $400,000. Current estimates are that $900,000 would complete the field investigations, preliminary plans and final plans and specifications over a two and one-half year period. We are concerned that initial funding be secured before the five year deauthorization deadline in Section 1001A of the 1986 Water Resources Development Act.

The City has long perceived flooding to be a major problem to lives, property and economic viability of our community. For this reason the early efforts to construct the levees occurred. Also, the City is a participant in the regular flood insurance program. However, these measures do not eliminate the risk to our community.

In addition to our concerns about the life and safety of the citizens that live within the flood plain area, we also are greatly concerned about the potential of a major flooding situation to damage the major employers who are in the area, namely Ark City Packing Co. and Total Petroleum Refinery. These two industries are viable, going enterprises. Over $25,000,000 was expended by the two industries within the last year to upgrade and revamp their facilities in our community. These two companies employ over a thousand people, which is approximately twenty-five percent (25%) of the jobs in this City.

Attached to this letter are certain excerpts from the 1984 Corps of Engineers study on the project. If funds are appropriated for this project, the City of Arkansas City is willing and ready to proceed with this cooperative and joint effort to protect our community. We strongly urge the Committee to include funding to begin this project in the appropriations bill for 1989. Officials of the City will appear for questions or further elaboration if the sub committee desires.

EXCERPTS FROM THE

INTERIM SURVEY REPORT AND
ENVIRONMENTAL IMPACT STATEMENT

ON THE

ARKANSAS CITY, KANSAS
FLOOD CONTROL ON THE
ARKANSAS AND WALNUT RIVERS

FLOODING PROBLEM (8)

The levees partly encircle property valued at over $437 million, including several large industries with the standard project flood plain. In all, about 1,900 structures have been built on the 2,100 acres in the flood plain, including about 1,780 residential dwellings and 100 industrial and commercial buildings. Industries in the flood plain employ about 1,100 people and an estimated 4,100 people live in the flood plain. Some flooding occurs from C Street Canal which drains part of northern Arkansas City and flows into the Walnut River. The combined existing flood plain of the Arkansas and Walnut Rivers and C Street Canal is shown on figure 3.

An event large enough to overtop the levee along wither river would cause levee failure and a wall of water would be released, producing devastating flooding as deep as 10 feet in industrial and heavily populated residential areas. The water would flow so swiftly as to be extremely hazardous to life and property. The majority of the damages would occur in the low lying, south and southeast areas of the city. Located in this area is the Total Refinery Corporation. If flood waters pooled deeply enough in the refinery storage area to cause the release of petroleum products, severe environmental damages would result downstream.

EXISTING AVERAGE ANNUAL FLOOD LOSSES (1-10)

Average annual flood losses under existing conditions for all reaches were estimated at $2.5 million. This represents less than 1 percent of the total value of flood plain property. Approximately $2.2 million in flood damages occurs to industrial property, mainly in Reaches A-1 and W-1. The next largest damage category is residential with almost $472,000 in damages on an average annual basis.

PROPERTY INVESTMENT (1-6)

The total investment in structures and property identified in the flood plain is estimated to be $437 million (based on 1983 prices and level of development). About $256 million is accounted for by industrial plants most of which is the oil refinery complex.

The second largest investment category is residential structures and contents. Within the flood plain there is about $81 million invested in these types of property.

CONCLUSIONS (63)

This study has shown that Plan C2 and Plan F2 can provide flood protection to Arkansas City at favorable benefit to cost ratios. The difference in plans is that Plan F2 provides protection north of C Street Canal; however, that additional protection is not economically justified. Plan C2 was identified as the NED plan.

Several public involvement meetings, held during the course of this study, show that citizens of Arkansas City favor Plan F2. Federal financial participation in the construction of Plan F2 would be limited to that identified for Plan C2 because the increment of Plan F2 north of C Street Canal is not economically justified. Therefore, Plan C2 was used as the basis of cost sharing. The costs of providing additional a real protection along the Walnut River, including associated costs such as mitigation would be the responsibility of the city based on traditional cost sharing.

The City's willingness to not only share in and support the Federal recommendation but to provide at their expense additional area flood protection is expressed in their 15 May 1984 resolution of assurances contained in appendix 2, "Public Views and Responses".

In conclusion, the plan recommended for authorization is the NED plan, Plan C2. The total cost of Plan C2, in July 1983 prices, 7-7/8 percent interest, and 100 year project life is 14.06 million. Annual costs and benefits are approximately $1.49 million and $3.45 million, respectively. Excess benefits are $1.96 million and the benefit to cost ration is 2.3. If it is the decision of the city to add flood protection measures beyond those included in the NED plan, the city would be responsible for the additional costs of construction and mitigation.

STATEMENT OF DAVID WATKINS, PRESIDENT, MO-ARK ASSOCIATION

On behalf of the MO-ARK Association, I am writing to offer our support to the following projects contained in the Fiscal Year 1989 budget submitted by the President. The MO-ARK Association is particularly supportive of the general investigation studies proposed for the Blue River Basin in Kansas City, Missouri, adjacent to the Dodson Industrial Park area ($145,000), a study of the Turkey Creek watershed which traverses Merriam, Kansas, Kansas City, Kansas, and Kansas City, Missouri ($160,000), construction work along the Blue River channel in Kansas City, Missouri, near the mouth of the Blue River and the Missouri River ($9,116,000), work on a turbine generator at the Harry S. Truman dam and reservoir ($6,445,000), work on the Little Blue River lakes ($3,017,000), and work on the Missouri River levees ($350,000). I would also like to highlight one of the most important projects contained in the budget request as it affects the Kansas City metropolitan area. This funding request involves preconstruction engineering and design work on the Brush Creek channel in Kansas City, Missouri ($390,000).

In September of 1977, a devastating flood occurred along the Brush Creek channel resulting in the loss of lives of 25 persons in addition to millions of dollars of property damage along the creek channel. This project is absolutely essential to the preservation of one of Kansas City's most unique residential and commercial areas, as well as protecting the lives and properties of many residents who live along the Brush Creek channel. MO-ARK strongly supports your subcommittee's endorsement of this project contained in the fiscal year 1989 budget request.

MO-ARK is a multi-state organization comprised of public and business officials dedicated to the construction of water supply and flood control projects within our geographical boundaries. Our organization attempts to bring divergent interests together to promote common causes. The projects listed above exemplify multi-state and metropolitan-wide cooperation and support. We believe our area is unique in mobilizing local support for federally funded projects which is indicated by the fact that affected jurisdictions have agreed to provide local participation monies to match federal funds to be appropriated for these projects. We hope that you give strong consideration to these budget requests.

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

Senator JOHNSTON. The subcommittee has received many additional statements supporting various projects around the country, especially in the Southeastern region of the country.

I ask that those statements be placed in the record at this point.

[The statements follow:]

STATEMENT OF THE UPPER MISSISSIPPI RIVER BASIN ASSOCIATION

PROJECT: Upper Mississippi River System Environmental Management Program, IL, IA, MO, MN, WI

PRESIDENT'S REQUEST: $7 million

PROPOSED APPROPRIATION: $12 million

AUTHORIZED APPROPRIATION: $18.56 million

The Upper Mississippi River Basin Association, established by the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, serves its member states' needs for dialogue and cooperative action on water resources issues of common concern. The Association's predecessor Commission was the author of the Congressionally authorized "Comprehensive Master Plan for the Management of the Upper Mississippi River System" which, when submitted to Congress in 1982, set in motion what has come to be known as the Environmental Management Program for the Upper Mississippi River System (UMRS-EMP). The Association is designated by Congress as the "caretaker of the Master Plan" or EMP and therefore serves as the regional forum for the implementation of that program.

As the Mississippi River bisects the heart of the nation, it affects the lives and livelihood of the millions who reside along its shores. As a vehicle for commerce it supports them and other millions around the nation who rely on the commodities and goods that it transports. As a large and scenic river, the upper reaches of the Mississippi provide important and well utilized recreational opportunities to the residents of our Association's states. Countless others from across the nation seek out the River and its natural and scenic features as the focus for their vacation and recreation plans or as a stop on the way across the country. The abundance of habitat serves to attract a diversity of fish and wildlife that supports both commercial and recreational uses. The habitat also supports the preservation of species whose limited numbers are a matter of national concern.

The Upper Mississippi River Basin Association strongly supports the inclusion of $12 million for the UMRS Environmental Management Program in the FY 1989 Energy and Water Development Appropriations bill. Though the Administration has requested $7 million for this program, the Association firmly believes that additional effort is not only possible, but absolutely essential if the program is to attain its objectives.

Section 1103 of the Water Resources Development Act of 1986 (P.L. 99-662) authorizes over $18 million for the UMRS Environmental Management Program for the second year of this ten year effort. While the Association is not proposing appropriation of the full authorized amount in FY 1989, it is imperative that program funding begin to approach the authorized level of effort as early in the program as possible. This is not only critical to the success of the program, but is also fundamentally important because authorized funding does not carry forward to future years or otherwise remain available until expended. In the first year of the program (FY 1988) only $5.168 million was appropriated, although over $16 million was authorized.

The UMRS Environmental Management Program authorized by Section 1103 of P.L. 99-662 consists of five primary components:

- habitat enhancement and rehabilitation projects
- long-term resource monitoring
- recreation projects
- economic impacts of recreation study
- traffic monitoring.

The major emphasis of the program and the major portion of available funding is directed toward the projects to rehabilitate and enhance backwater habitats and the long-term resource monitoring effort. The rehabilitation projects involve the identification of key habitat areas which are being degraded by natural or human-induced activities. The projects are designed to restore or protect areas which may be adversely affected by sedimentation from upland erosion or by the use and operation of the system for navigation purposes. Each of the projects (ranging in cost from $30,000 to $4 million) employ different types of techniques including such things as dredging to remove sediment, dike or levee construction, island creation, water control systems, or side channel closures or openings.

The long-term resource monitoring program will not only evaluate the effectiveness of the habitat rehabilitation projects, but will generally track the environmental health of the river system. Long-term trends in selected physical, chemical, and biological parameters will be monitored. In addition, laboratory and field analysis will be undertaken for specific resource problems.

It is obvious that the UMRS Environmental Management Program is uniquely different from more traditional Corps of Engineers project authorities. The issues are complex; the system is vast in geographic scope; and the program embodies a multitude of diverse individual projects. Adequate and stable funding for such a program is a major key to its success.

The multi-purpose management approach for the river system supported by the Association includes both the improvement of the system's commercial navigation features, including a second lock at Lock and Dam 26, and enhancement of the system's environmental and recreational values. Completion of the second chamber over the next four years will require a significant federal investment. Over the life of the program it is imperative that federal investment in the environmental and recreational components of the system be kept equivalent to the investment in the second lock if the Congressional commitment to multi-purpose management is to be maintained.

Appropriation of the recommended $12 million for the UMRS Environmental Management Program would enable the Corps of Engineers, U.S. Fish and Wildlife Service, and the States, as partners in this cooperative effort, to fulfill a number of their responsibilities under the authorized program:

1) Based on the States' collective assessment of project readiness, additional important habitat rehabilitation projects would proceed to construction utilizing approximately $5 million. While Congress authorized appropriations in P.L. 99-662 of over $12 million in fiscal year 1989 for this program element, the Administration has currently programmed only $3.3 million.

2) Additional work totalling $1.2 million would be done on the engineering and design of habitat rehabilitation projects for construction in future years. If the program is to ever approach the level of effort authorized in P.L. 99-662, it is essential that pre-construction design work for individual projects be undertaken, particularly in the early stages of this 10-year effort.

3) Nearly $5.3 million of effort would be devoted to long-term resource monitoring. Funds currently included for this program in the Administration's budget are insufficient to advance the monitoring effort to the point that it can serve as a truly useful tool in tracking the environment and measuring improvements resulting from habitat projects. It is also critical that the monitoring effort be fully functional prior to 1992 when the second lock at

Lock and Dam 26 is completed so that the effects of increased traffic levels can be properly evaluated. Additional funds would be used to support operations at three field stations and enhance analysis of sedimentation, navigation effects, and water level fluctuation problems.

4) Approximately $120,000 would be directed toward the design of recreation projects and $250,000 would be allocated for the assessment of the economic impact of recreation development. The Administration's budget request includes no funds for recreation projects. The Administration has indicated that as a matter of national policy it does not intend to pursue any recreation project efforts, even if they are cost-shared. While we recognize budget constraints we believe that this policy is inconsistent with the multi-purpose management approach embodied in the Master Plan which was approved by Congress as a guide for future water policy on the Upper Mississippi River System.

A clear expression of Congressional intent will help insure that the recreational component of this multi-purpose program is preserved. In addition to reinstating funds for recreational development within the appropriations for the UMRS Environmental Management Program, it will be necessary for Congress to direct that a portion of those funds be expended on recreational development. The Upper Mississippi River Basin Association believes that statutory guidance is the only avenue available to redirect current Administration policy with regard to recreational development. It is therefore the Association's recommendation that the FY 1989 Energy and Water Development Appropriations Bill include language as follows:

> "Within these funds, the Secretary of the Army is directed to initiate the design and construction of cost-shared recreation projects as part of the UMRS Environmental Management Program."

The States of the Upper Mississippi River Basin are deeply committed to the implementation of the UMRS Environmental Management Program. The Governors, or Governor's representative, of each of the five states have signed letters of assurance as an expression of their intent to cooperate and cost-share with the federal government. In addition, many of the individual projects undertaken under the authority of this program require the execution of binding local cooperation agreements. The states are prepared and eager to assume their responsibilities and have, in many instances, committed significant staff and financial resources of their own to support the collaborative efforts necessary to sustain the program. Similarly, the federal agencies involved in this unique program must be fully equipped to assume their responsibilities. The states expect that the Congress and Administration will insure that the Corps of Engineers has sufficient staff resources to execute the program.

The states as partners in this program are dedicated to its success. As such, a deliberate effort has been made to realistically and responsibly define the potential scope of the work effort in FY 1989. It is the Association's firm belief that substantial progress can be made toward the protection, rehabilitation, and development of the unique resources of the Upper Mississippi River System if $12 million is committed to this effort in FY 1989. Because this funding level exceeds the President's budget request, the State of Missouri does not support this proposal. However, the collective judgment of the other cooperating states, in consultation with the federal participants, leads us to promote this funding level with the confidence that it can and must be done if this program is to be a success.

The Upper Mississippi River Basin Association and its member states are confident that the UMRS-EMP partnership that has been established with the Corps of Engineers and the U.S. Fish and Wildlife Service is a strong and viable one. Congressional commitment to this program is a wise investment and one which the Association urges be made.

STATEMENT OF THE TRI RIVERS WATERWAY DEVELOPMENT ASSOCIATION

SUMMARY

TRI-RIVERS WATERWAY DEVELOPMENT ASSOCIATION

REQUEST FOR FY 1989 FUNDING

OPERATIONS AND MAINTENANCE

Apalachicola, Chattahoochee, Flint River System including George W. Andrews Lock, Dam and Lake.	$4,574,000
Jim Woodruff Lock, Dam and Lake Seminole, Alabama, Florida	4,453,000
Buford Lock, Dam and Lake Sidney Lanier, Georgia	6,567,000
Walter F. George Lock, Dam and Lake, Alabama and Georgia	5,889,000
West Point Dam and Lake, Georgia	3,847,000

Thank you, Chairman Johnston and members of the committee for this opportunity to present the needs of the Apalachicola-Chattahoochee-Flint Waterway as we see them.

I am Homer Hirt, Jr., of Sneads, Florida, President of the Tri-Rivers Waterway Development Association. The primary objectives of our association are the effective development, utilization, and maintenance of the Apalachicola-Chattahoochee-Flint River System for commercial navigation.

The basic authority for the navigable waterway is the 1945 River and Harbor Act which called for a 9 by 100 foot navigation channel from Apalachicola, Florida to the Phenix City, Alabama/Columbus, Georgia area on the Chattahoochee River and Bainbridge, Georgia on the Flint River.

Our organization is, of course, interested in and supports flood control, power generation, water supply, low flow augmentation, recreation and wildlife enhancement.

As we accomplish these objectives we are also strengthening the economic development base in Southeast Alabama, Southwest Georgia and Northwest Florida. Accomplishing these objectives has been the thrust of our association since it was founded in 1960.

We are here today to thank you for the funds you have provided for the continual operation and maintenance of the

Apalachicola-Chattahoochee-Flint River System and to urge funding of the request in the President's budget submitted to Congress for the Fiscal Year 1989. This request of $4,574,000 is for the continued operation and maintenance of the ACF System.

We also urge you to appropriate funds requested in the President's budget for the operation and maintenance of four multi-purpose dams on the ACF Waterway, including:

Jim Woodruff Lock, Dam and Lake Seminole	$4,453,000
Buford Lock, Dam and Lake Sidney Lanier	6,567,000
Walter F. George Lock, Dam and Lake	5,889,000
West Point Dam and Lake	3,847,000

There are six public ports along the ACF waterway representing an investment of more than $15 million. In addition, there are millions of additional dollars invested in private facilities and industrial operations.

Even though traffic was halted during the month of November because of low water, tonnage reached 940,498 tons for 1987, the fourth highest total in the last nine years. This represents a savings in transportation cost to industries in the ACF basin of millions of dollars. Economic development factors show that 940,498 tons also means several hundred jobs, and millions in personal income and state and local taxes.

During 1987 the association completed a study on, "Barging Options For Moving Tri-Rivers Area Forest Products to Northern Markets." The study has been mailed to over 150 forest related industries and organizations who have an interest in using or promoting the use of our system. The study has generated much interest and shows that forest products, which are plentiful in the ACF basin, can be shipped profitably on the system under certain conditions.

Mr. Chairman, you and your fellow committee members have demonstrated your commitment to keep our nation's inland waterway systems as viable entities to the nation's economy. Through this commitment you have strengthen our nation's economy and the standard of living for many of our nation's citizens, especially those living in the ACF basin of Alabama, Georgia and Florida.

We are grateful for this commitment and for the knowledge that it will not wavier.

Proposed legislation has been introduced to alter the original purpose of the Buford Dam and Lake project, now known as Lake Sidney Lanier, as authorized in the River and Harbor Act of 1946. This dam and reservoir is a key project on the ACF River System. If the original purpose of flood control, navigation and hydroelectric power is altered, commercial navigation will be harmed and the economy and livelihood of residents in the lower Apalachicola-Chattahoochee-Flint River Valley will be adversely affected.

Mr. Chairman, we urge you and the members of your committee to oppose this proposed legislation

Thank you.

STATEMENT OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

We have enclosed the State of Florida's Fiscal Year 1989 Program of Public Works. This document contains the unified program of public works projects and studies that are consistent with the State's goals and objectives.

For FY 1989 we received 53 public works applications. All applications were circulated for review and comment through the State's clearinghouse of state and regional agencies. Summarized in this booklet are 34 projects and studies which are recommended for federal funding.

We appreciate support in past years for the operation and maintenance, study, and construction of public works in Florida. We look forward to working with you on the FY 1989 request.

Study or Project	Request	Page
FLOOD DAMAGE PREVENTION AND WATER SUPPLY		
1. Broward County Comprehensive Water Management Plan	$100,000	2
2. Central and Southern Florida FCP (Hillsboro Canal Survey Review)	$19,000,000 $150,000	4
3. Four River Basins Project	$800,000	8
4. Northwest Florida Coastline Groundwater Management	$1,000,000	10
5. St. Marys River Basin Management	$125,000	12
6. St. Petersburg Coastal Flooding	$100,000	14
7. Upper St. Johns Project	*	16
NAVIGATION		
8. Big Sarasota Pass	$200,000	20
9. Clearwater Spoil Disposal	$150,000	22
10. Fort Pierce Harbor	$200,000	24
11. Miami Harbor Channel	$700,000	26
12. Miami River Cleanup	$100,000	28
13. Port Canaveral	$59,000	30
14. Port Everglades	$50,000	32
15. Port Manatee Project	$5,000,000	34
16. Port of St. Petersburg Basin/Channel Dredging Project	$50,000	36
17. Stump Pass	$375,000	38
BEACH EROSION CONTROL		
18. Captiva Island Beach Nourishment	$2,300,000	40
19. Delray Beach	$300,000	42
20. Dinner Key Beach Landing (Dade Co.)	$90,000	44
21. Fort DeSoto Park Erosion Control	$100,000	46
22. Fort Pierce Beach	$100,000	48
23. Longboat Key	$474,600	50
24. Manatee County Beach Erosion	$5,400,000	52
25. Monroe County Beach Erosion	$193,000	54
26. Pinellas County (Indian Rocks Beach)	$3,165,000	56
27. Sarasota Co. (Venice/Caspersen Beach)	$680,000	58
28. Town of Palm Beach	$1,500,000	60
29. Virginia Key Barrier Island Park (Dade County)	$50,000	62
30. Watson Island Park (Dade County)	$50,000	64

ENVIRONMENTAL RESTORATION AND ENHANCEMENT

31. Biscayne Bay Survey Review	$700,000	66
32. Lower Hillsborough River Water Quality Enhancement	$100,000	68
33. Six Mile Cypress	$150,000	70
34. Addendum: Vero Beach (Indian River Co.)	$5,540,000	72

* Cost figures for the project are included in those for the Central and South Florida Flood Control Project.

INTRODUCTION

This document presents the 1989 unified program of public works studies and projects that have been determined to be consistent with the goals and objectives of the State of Florida. As provided in Chapter 373, Florida Statutes, the Department of Environmental Regulation (DER) is directed to select those water resources projects that provide for the "public welfare and interest of the people of the state as required for the proper development, use, conservation, and protection of the waters of the state". After selection, these projects are presented to the appropriate Federal agencies and the Congressional Appropriations Committees.

The State's annual public works program begins each February with the Water Resources Development Conference. Following the conference, proposals are evaluated through the State and Regional Intergovernmental Coordination and Review Process. The scope of this review includes technical adequacy and completeness, as well as general conformance with applicable State and regional goals, policies, and objectives. The results of this review are carefully evaluated. Each study and project submitted at the annual conference is evaluated for inclusion in the State's program.

Estimates of cost are derived from local sponsors and the Army Corps of Engineers. Projects are grouped into four categories: **Flood Damage Prevention and Water Supply, Navigation, Beach Erosion Control,** and **Environmental Restoration and Enhancement**. The descriptive narrative and justification statements included in this booklet are developed using data provided by local sponsors, the Army Corps of Engineers, DER staff, and other sources.

Some of the project recommendations include conditions for approval. This reflects State support for those projects, provided certain additional actions are undertaken by the Corps and/or local sponsors prior to the State's final funding request to Congress.

A Department recommendation for funding does not indicate the granting of any applicable permits at either the State or Federal level. In most instances, some form of permit must be obtained, unless waived through a separate process, and the securing of these permits remains a responsibility of the local sponsor.

FLOOD DAMAGE PREVENTION (AND WATER SUPPLY)

Broward County Comprehensive Water Management Plan

Central and Southern Florida Flood Control Project
(Hillsboro Canal Survey Review)

Four River Basins Project

Northwest Florida Coastline Groundwater Management

St. Marys River Basin Management

St. Petersburg Coastal Flooding

Upper St. Johns Project

Broward County Comprehensive Water Management Plan
(Reconnaissance Study)

Estimated Federal Cost	$475,000
Estimated Non-Federal Cost	375,000
Federal Funds Through FY 88	100,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

Broward County is experiencing rapid growth, which is exacerbating flood control and water supply problems. As the local sponsor, Broward County is seeking assistance from the Army Corps of Engineers for its current planning efforts which include: 1) protecting the sole-source Biscayne Aquifer from pollution and salt-water intrusion, 2) developing methods for increasing water supply and decreasing demand through conservation, and 3) planning and designing structures for water control and supply. The study received congressional authorization on August 12, 1986.

As part of the Central and Southern Florida Flood Control Project authorized by Congress, the Corps of Engineers has studied this area at a regional level. Funding of $100,000 is requested by the County to address specific county-wide concerns. The study would: 1) identify sources of treated wastewater effluents acceptable for use in creating a non-saline barrier, 2) select recharge and irrigation sites, 3) plan, design, and project the future costs of water supply/flood control structures, and 4) analyze water quality.

Project Justification

The project would provide the following benefits to Broward County: 1) ensure a continued supply of unpolluted, potable water to county residents and visitors, 2) provide flood protection, and 3) allow for the scheduled development of water resources construction and water supply facilities.

Central and Southern Florida Flood Control Project
(Construction, Preconstruction Engineering and Design)

Estimated Federal Cost	$838,000,000
Estimated Non-Federal Cost	480,875,000
Federal Funds Through FY 88	313,335,000
Non-Federal Funds Through FY 88	53,413,000
State of Florida Request FY 89	$19,000,000

Project History/Description

The Central and Southern Florida Flood Control Project (C&SFFCP) is a massive system of water control works first authorized by Congress in 1947. The project area encompasses approximately 17,930 square miles over all or part of 16 counties and includes the Kissimmee River Basin, Lake Okeechobee and its regulatory outlets, a large portion of the Everglades, and the lower east coast of Florida. While the initial purpose of the project was primarily flood control, its objectives were expanded by the Army Corps of Engineers and Congress in 1968 to provide for increased storage and conservation of water and for improved distribution of water throughout the project area. Especially important in this year's program are components to preserve and enhance Lake Okeechobee. This lake (Florida's largest) provides important benefits for a major portion of South Florida including flood control, water supply, recreation, and critical habitat for many species of wildlife.

Lake Okeechobee is under considerable stress from heavy nutrient loading. The Lake Okeechobee Technical Advisory Committee, (LOTAC), consisting of a broad spectrum of interests and technical expertise, was established in 1985. The Committee's final report published in August, 1986 contained several recommendations to improve water quality in the lake. Some of these recommendations pertain directly to the Central and Southern Florida Flood Control Project. With the creation of LOTAC II, the State is re-emphasizing its commitment to restoring, preserving and protecting Lake Okeechobee. We look forward to working closely with the Corps on the project to achieve this end.

The local sponsor, the South Florida Water Management District (SFWMD), has requested the following project components for FY 89:

(1) Hillsboro Canal Survey Review. This feasibility study will evaluate alternative means of reducing flood damages in the basin. It will also study possible measures for increased flexibility in discharges from Water Conservation Area 1. This study requires reauthorization.

(2) C-111/South Dade Flood Control Projects. This planned modification of an existing canal is intended to provide a more natural hydroperiod in the C-111 basin and to restore sheetflows to part of Everglades National Park instead of a point-source freshwater discharge to Manatee Bay. The plan would not lower flood protection for agricultural interests in the area.

(3)Protecting the Herbert Hoover Dike. Continuation of construction work on the Herbert Hoover Dike Revetment will protect the integrity of the existing dike from erosive wind and wave action at the upper regulation stage.

(4) Shingle Creek Basin Project. The project is being designed to alleviate flooding problems in the urbanized upper and lower portions of the Shingle Creek drainage basin and to provide adequate sheetflow to a large cypress strand in the middle portion of the basin which has been overdrained. Canal segments in the upper and lower portions would be enlarged to increase flow. A retention lake with a controlled outflow is being considered to improve water quality. Also, redirection of flows into the middle basin swamp and then through the lower basin flow-way is planned to provide for increased nutrient uptake.

(5) St. Lucie Canal Bank Stabilization. Modification of the canal banks by combinations of artificial and natural stabilization will help lessen serious bank erosion problems in the existing canal.

(6) Repowering of Pump Stations 6 and 9. This project will replace the engines and other parts of S-6 and S-9. This involves no change in project operation.

(7) Reconstruction of Hurricane Gates 3 and 5. This is also replacement work.

(8) Western C-51 Project. The Corps and the Water Management District are reevaluating this proposal which involves planning for a new flood control pump station at the north end of Conservation Area 1 and the enlargement of the western part of the C-51 canal. The main alternative under consideration is a flood detention area in the Western C-51 basin.

(9) L-8 Water Supply. Implementation of the Lake Okeechobee Interim Action Plan has reduced water supply availability. The proposed project involves the construction of a new pump station (S-309) to backpump water into Lake Okeechobee to compensate for some of the water being diverted. Detention ponds are proposed near the lake to improve the quality of backpumped water. A draft GDM is not yet available for review.

(10) Shark River Slough Restoration (East Everglades/National Park). The restoration is planned to create more natural flow to Everglades National Park and Northeast Shark River Slough, improve recharge to public wellfields, and provide 1-in-10-year flood protection for an 8 1/2-square-mile developed area west of the present flood control system. A draft GDM is not yet available.

(11) Bolles and Cross Canal Improvements. The purpose of this project is to improve the canals to the same standards as the primary canal system. Benefits include flood reduction in the Everglades Agricultural Area and reduced nutrient loading caused by backpumping to Lake Okeechobee. A GDM is not yet available.

(12) St. Lucie County Water Supply. FY 89 funds would allow further planning or construction for C-131. The Lake Okeechobee Technical Committee made specific recommendations involving this component that would significantly reduce nutrient input to Lake Okeechobee while also increasing agricultural water supplies. A GDM is not yet available.

(13) Rehabilitation of S-44 on Canal 17. This would improve the capacity of the structure in northern Palm Beach County to release flood waters. A GDM is not yet available.

(14) Golden Gate Survey. Some portions of the Golden Gate area have been overdrained while others are underdrained. The objective of this project is to conserve freshwater within the basin, reduce freshwater discharges to the bay, and to restore drained wetland areas to create a more natural hydroperiod. Corps assistance on plan refinement is necessary. Depending on the restoration plan finally selected, the assistance of the Corps on project implementation may also be requested.

Project Justification

In the first half of this century, heavy seasonal rains combined on several occasions with the passage of hurricanes to cause extensive long-lasting flooding. The C&SFFCP and its local sponsor, the SFWMD, are the result of Federal and State responses to the severe flooding of 1947. South Florida also experiences periodic severe droughts. In 1968 the project was expanded to include increased storage and conservation of water and improved distribution of water throughout the project area. Special emphasis is being given in the future to the maintenance and enhancement of Lake Okeechobee.

Recommendation

Funding is recommended. The Department will carefully review project design documents as they are released. Support of some FY 89 project components is tentative due to the lack of detailed project designs.

Four River Basins Project
(Construction)

Estimated Federal Cost	$153,000,000
Estimated Non-Federal Cost	128,700,000
Federal Funds Through FY 88	70,710,000
Non-Federal Funds Through FY 88	49,847,000
State of Florida Request FY 89	$800,000

Project History/Description

The Four River Basins Project, sponsored by the Southwest Florida Water Management District, has been under construction since 1966 to provide flood protection for an area of approximately 6,000 square miles in 14 counties of central and southwest Florida. It includes part of the drainage basins of four streams--the Hillsborough, Oklawaha, Withlacoochee, and Peace Rivers--and three smaller west coast watersheds-- the Pithlachascotee River, the Anclote River, and Lake Tarpon. The authorized plan includes numerous works in several parts of the project area. Some major components of the project have already been completed, including the Tampa Bypass Canal, the Lake Tarpon Outfall Canal, the Masaryktown Canal, and the Tsala Apopka Outfall Canal, along with related water control structures, railroad bridges, highway bridges, and various relocations.

The FY 89 request is for continued work on the Lower Hillsborough Wilderness Park at the Flatwoods Park Site in Hillsborough County.

Project Justification

This facility is located close to the Tampa metropolitan area and is a regional recreational resource. The further recreational development of the Lower Hillsborough Wilderness Park will allow greater use of the major land resources acquired as part of the Four River Basins Project.

Recommendation

This project has been in the Program since FY 86. It is recommended for FY 89 funding.

Northwest Florida Coastline Groundwater Management
(Study)

Estimated Federal Cost	$3,200,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$1,000,000

Project History/Description

The Northwest Florida Water Management District has requested funding to develop a management plan for groundwater quality and quantity in coastal areas of Northwest Florida. This project would include construction of test monitoring wells along the coast. These wells will provide information to: 1) locate and map the fresh/salt water interface in the Floridan aquifer, 2) determine, based on configuration of saltwater interfaces, the availability of water for public supply and other uses, and 3) assist in refining existing groundwater quality and quantity management plans and regulations to more accurately reflect existing groundwater conditions and potential change. These wells will be incorporated into the monitoring programs of the Northwest Florida Water Management District.

Project Justification

Population in the coastal areas has increased very rapidly in the last ten years, and the number of tourists from Panama City Beach to Pensacola has also rapidly increased. The demand for water during the summer months now equals the full capacity of most public water supply systems. Water quality and quantity problems, though often ill-defined, have been evident in many of the coastal areas and are generally related to growth in demand. Thus, there is an acute need for a study to provide water managers with the information needed to manage the problems while meeting the increasing demands for water. The 1987 Congress appropriated $350,000 for this study, but the Corps did not release the funds. Congress appropriated $200,000 in FY 1988. The Corps plans to reallocate these funds. A recent Reconnaisance Report recommended against further federal participation.

Recommendation

This study has been in the Program since FY 86. Funding is strongly recommended.

St. Marys River Basin Management
(Study)

Estimated Federal Cost	$1,129,000
Estimated Non-Federal Cost	453,000
Federal Funds Through FY 88	912,000
Non-Federal Funds Through FY 88	236,000
State of Florida Request FY 89	$125,000

Project History/Description

The St. Johns River Water Management District (SJRWMD) is proposing completion of funding for a study of floodplain management in the St. Marys River Basin. The St. Marys River forms, for most of its length, the northeastern boundary of the State of Florida and drains about 1,500 square miles. About 540 square miles of the basin are in Georgia.

The District hopes to obtain a wide variety of useful information from the study including a compilation of existing data; an accurate identification and field verification of all subbasins within the watershed and preparation of a mylar base map series; a topographic map series of the 100-year floodplain at a two-foot contour intervals; a delineation of 2-year and 100-year floodways and floodplains within main tributary streams; an analysis of existing streamflow and rainfall monitoring networks; and a basin-wide, watershed management model.

The Savannah District Corps of Engineers has completed a Reconnaissance Report for the St. Marys River Basin study based on work completed in FY 84. This report was received and reviewed by the SJRWMD in January 1985. A preliminary report of floodplain profiles and floodplain delineation is expected to be completed this year.

Project Justification

This study would significantly improve water resource planning and management in the St. Marys River Basin. The initiation of a baseline study may help prevent future problems. The hydrology of the river system would be better understood and management of the basin would be improved. Flood damage costs could be reduced and human lives saved from disruption. Environmental changes such as structural modifications in the drainage system may be minimized by using the information gained in the study.

Recommendation

This study has been in the Program since FY 83. Funding is recommended.

St. Petersburg Coastal Flooding
(Feasibility Study)

Estimated Federal Cost	$625,000
Estimated Non-Federal Cost	375,000
Federal Funds Through FY 88	250,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

This is a proposal by the City of St. Petersburg for a feasibility study to examine the causes of and to develop solutions to flooding problems in the coastal areas of the City. The study would focus on the urban areas in Pinellas County bordering Tampa Bay which are subject to a 100-year storm event. Coastal flooding, stormwater drainage and management, storm surge protection, and cost-effective flood protection are potential topics of investigation. The City is currently expending $1.2 million on drainage maintenance in the affected areas. It will be funding a study of the flooding problem and is prepared to participate in cost-sharing in future phases.

Project Justification

Flood damage in coastal St. Petersburg exceeded $8 million in 1985. An estimated 90,000 people are potentially subject to coastal flooding. Alleviation of flooding will reduce flood damage costs to the city, particularly for roadway and drainage maintenance. Citizens will benefit from reduced private property damage and reduced insurance rates.

Congressional study authorization is necessary.

Recommendation

This study was included in the FY 88 Public Works Program. Congress appropriated $250,000 for the study for that year. Continued funding is recommended.

Upper St. Johns Project
(Construction)

Estimated Federal Cost	Figures for the project
Estimated Non-Federal Cost	are included in those
Federal Funds Through FY 88	for the Central and
Non-Federal Funds Through FY 88	Southern Florida
State of Florida Request FY 89	Flood Control Project.

History/Description

The project area of the Upper St. Johns River Basin in east-central Florida encompasses about 2,000 square miles and consists of some 60 individual contributing subbasins. The St. Johns River Water Management District (SJRWMD), in cooperation with the Army Corps of Engineers, has completed the revised General Design Memorandum for the Upper St. Johns Project.

This project is designed primarily to restore, to some degree, the original hydrologic cycle, which was greatly altered by drainage for pasture, citrus and agricultural purposes, to the Upper St. Johns Basin. This drainage and altered land usage destroyed vast marshlands, and causes higher flood levels during periods of high rainfall and severe droughts during periods of low rainfall. It also has adversely affected the fresh water inflow and quality of discharge to the saline Indian River. The project is expected to moderate these adverse conditions by constructing retention areas, altering existing manmade drainage, and creating and preserving floodplain marshlands. The retention areas and floodplains should decrease the flood damage, improve water quality (by absorbing much of the nutrient load), and help maintain water levels during drought periods. The reduction in low-water levels will also alleviate water shortages now experienced by the local governments and agricultural industry that depend on the Upper St. Johns River for a water source.

The GDM has been approved by concerned agencies and construction is underway.

Project Justification

This project could begin reversing decades of environmental damage in the Upper St. Johns River Basin. The multi-faceted nature of the project is especially promising. The project offers flood control, water supply, restoration of minimum flows, and marsh re-creation with associated water quality benefits.

Recommendation

This project has been in the Program since FY 83. Funding is recommended.

NAVIGATION

Big Sarasota Pass

Clearwater Spoil Disposal

Ft. Pierce Harbor

Miami Harbor Channel

Miami River Cleanup

Port Canaveral

Port Everglades

Port Manatee Project

Port of St. Petersburg Basin/
Channel Dredging Project

Stump Pass

Big Sarasota Pass
(Preconstruction Engineering & Design)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	"
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$200,000

Project History/Description

A study was initiated in 1978 to determine the feasibility of incorporating six passes along the central Gulf Coast of Florida into the existing Intracoastal Waterway. The 1984 Draft Feasibility Report eliminated all but Big Sarasota Pass in northern Sarasota County and Stump Pass in Charlotte County from additional study. Congressional authorization is necessary, unless the Corps changes its position under the Continuing Authority Program, that "recreation" projects have low priority. This project would benefit a large class of recreational boaters, who contribute heavily to the economic development of Sarasota and Charlotte County.

The recommended plan for Big Sarasota Pass calls for a 200-foot wide channel with a 10-foot depth and 2-foot overdepth. Dredging would be through the outer shoal only, as natural depths along the interior channel are sufficient for navigation. Spoil will be distributed along a highly-eroded section of beach south of the Pass. Future maintenance disposal of sand may be deposited along the gulfward side of an existing shoal. Spoil disposal will allow continuation of littoral beach renourishment. A DER permit has been obtained.

Project Justification

There is a need for a reliable pass in Sarasota County. Incorporating this pass into the Intracoastal Waterway should result in greater consistency of navigation aids (buoys, signs, charts, etc.), which would assist boaters. Beach nourishment could be a valuable byproduct of this project. According to the local sponsor, there is evidence that water quality has improved after some dredging at a nearby pass because bay tidal flushing improved.

Recommendation

Funding for this project has been recommended since FY 88.

Clearwater Spoil Disposal
(Feasibility Study)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	"
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$150,000

Project History/Description

Growing commercial and recreational usage of Clearwater Harbor and St. Joseph Sound in Pinellas County will result in future public and private dredging requirements. Specific construction projects anticipated in the future include the following:

(1) Maintenance of the authorized Intracoastal Waterway;
(2) Access to Dunedin Pass;
(3) Access to the new Sand Key Coast Guard Station;
(4) Maintenance of public marina facilities;
(5) Maintenance of private marina facilities; and
(6) Restoration of residential finger canal water quality and navigation.

There are presently no provisions for the deposition of dredged material and there is concern about the quality of the material.

In mid-1986, the Corps released only working papers for this study since they could not identify any new project. Nonetheless, there is a need for improved management of spoil materials and a full feasibility study identifying suitable sites should be undertaken. In FY 88 Congress appropriated $100,000 for this study but the Corps reallocated these funds.

Project Justification

Population in this area is increasing rapidly, which is expected to increase the usage of the harbor areas. This, in turn, will increase the need for maintenance dredging. This study will identify a suitable area for the disposal of the dredged material.

Recommendation

This study has been in the Program since FY 83. Funding is recommended. The sponsor has been advised that all responsible alternatives for spoil disposal should be studied, including the sponsor's suggestion of open-water marsh creation.

Fort Pierce Harbor
(Preconstruction Engineering and Design)

Estimated Federal Cost	$496,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	296,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$200,000

Project History/Description

The Corps of Engineers has completed a study of the feasibility of deepening the Fort Pierce access channel and harbor area. The existing channel is 3.5 miles long and 25 feet deep. It extends from the Atlantic Ocean through Fort Pierce Inlet and terminates at Fort Pierce. A turning basin is located in front of the city docks. The main commodities shipped through Ft. Pierce are fresh citrus products, citrus pellets (exported), and aragonite (imported).

The original Corps plan has been modified substantially to a smaller project. The main channel is proposed to be 400' x 28'. There are no longer plans to expand the turning basin, and the amount of excavation has been reduced to 956,000 cubic yards from the original 3.7 million cubic yards. Some of the dredged material would be used to convert an area of deep water to shallow water habitat, and planted with seagrasses. Beach quality material would be placed on a beach south of the inlet, accompanied by beach grass planting. The project is not yet authorized for construction.

Project Justification

The proposed project would allow Fort Pierce Harbor to accommodate deeper draft ships, which would result in transportation savings to shippers. This should increase shipping through the port which could, in turn, attract new business and increase employment in the area. Unemployment in the Fort Pierce area considerably exceeds the state average. The project also provides recreational benefits and possible environmental benefits. The beach renourishment associated with the project would enhance beach recreation in the area. Finally, increased tidal flushing action (resulting from a deeper and wider channel) might improve the area's water quality.

Recommendation

This project has been in the Program since FY 82. We recommend that it be included in the FY 89 program, based on the condition that the applicant meets permitting requirements.

Miami Harbor Channel
(Preconstruction Engineering & Design)

Estimated Federal Cost	$1,500,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	95,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$700,000

Project History/Description

This request is for funds to complete the planning and engineering phase of the project which will address channel improvements associated with the present configuration of Miami Harbor. The specific problems being addressed are the possible hazards presented by side currents at the jetties, the constriction of the main ship channel in Government Cut from 400 feet to 500 feet in width, and the depths and widths of the channel on the south side of Dodge Island.

Due to the bend in the access channel, it can only be used for one-way traffic. Several groundings of large vessels have occurred over the past few years. The constriction of the ship channel inside Government Cut causes a navigational hazard compounded by strong incoming tides and currents. There is also a desire to modify the existing Government Cut jetty system to reduce rip tides in the main channel.

Project Justification

Project benefits could include a reduction in delays in navigating the access channel, a reduction of the need for tug services in the access channel and turning basin, and an increase in the safety of the harbor, particularly for larger ships. The project is strongly supported by the Biscayne Bay Pilots Association.

Recommendation

This project has been in the Program since FY 83. Funding is recommended, but conditioned upon a favorable review of the project's plans and EIS.

Miami River Cleanup
(Preconstruction Engineering and Design)

Estimated Federal Cost	$400,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

This proposal by Dade County is to dredge contaminated sediments from the Miami River in order to improve water quality. The Water Resources Development Act of 1986 authorized the Corps to remove the polluted bottom sediments in the river and Seybold Canal. It also authorized a $50,000 grant to establish a Miami River Management Commission. Both activities are supported by the State.

The project area includes the six miles of the Miami River in Dade County from its mouth to a point past 36th Street where it joins the Miami Canal, as well as the 14 miles of the canal within Dade County. The Corps' 1986 Draft Feasibility Report recommended no federal participation due to a lack of National Economic Development benefits. The Corps is presently reviewing comments on the draft and preparing a final report. Although the project sponsor has requested $26 million for construction in FY 89, the FY 89 request should be for engineering and design.

The river is a Federal navigation project with authorized channel depths of fifteen feet. Development over many years has caused serious water quality problems in the river and it appears advisable to remove the contaminated sediments in the channel. Studies already completed by both DER and the Corps confirm that the sediments are heavily polluted.

Project Justification

The Miami River is an underused urban resource. The Miami River Coordinating Committee and Dade County are striving to improve its value for navigation, recreation, tourism, and as an aesthetic amenity. The polluted sediments in the navigation channel are degrading water quality, preventing full use of this major urban river and degrading Biscayne Bay.

Recommendation

This proposal has been in the Public Works Program since FY 1985. Funding is strongly recommended.

Port Canaveral
(Feasibility Study)

Estimated Federal Cost	$184,000
Estimated Non-Federal Cost	141,000
Federal Funds Through FY 88	125,000
Non-Federal Funds Through FY 88	75,000
State of Florida Request FY 89	$59,000

Project History/Description

Canaveral Harbor is located on the east coast of Florida approximately 150 miles south of Jacksonville. The Canaveral Port Authority is requesting continuation of a feasibility study of dredging the Canaveral Harbor Channel and other areas of Port Canaveral to sufficient depths to allow for economical importation of diverse commodities. The study would also evaluate a possible expansion of Federal maintenance dredging at the port.

Project Justification

The port presently trans-ships over 2 million tons of diverse cargo annually and has the potential to increase the tonnage if the channel were deepened and widened to accommodate deeper draft vessels. Deepening the West Basin would yield economics in both the cruise ship operations and the planned ship repair and dry dock operations.

The sand dredged from the channel is expected to be of good beach quality and should be used for nourishment at Cape Canaveral and Cocoa Beach.

Maintenance dredging of the various channels and turning basins at Port Canaveral is currently done by the port authority, the Corps of Engineers, as well as the Navy. This multiple maintenance situation is inefficient. A series of contracting conflicts have made dredging more expensive and time consuming than it would have been if done under a single contract. Federal assumption of this maintenance dredging would alleviate these problems.

Recommendation

This study has been in the Program since FY 84. Funding is recommended.

Port Everglades
(Feasibility Study)

Estimated Federal Cost	$165,000
Estimated Non-Federal Cost	122,000
Federal Funds Through FY 88	115,000
Non-Federal Funds Through FY 88	72,000
State of Florida Request FY 89	$50,000

Project History/Description

This would continue a study of the desirability of modifying the existing federal navigation project at Port Everglades. The Port is managed by the Port Everglades Authority, a special district in Ft. Lauderdale and Hollywood, Florida. The Port serves both import and export markets. The Port is the fourth-largest cruise ship port in the world, and it includes an active Foreign Trade Zone, a major containerization trade, and significant general cargo business. It also serves as a very large petroleum importer.

The Port Everglades Master Plan projects continued expansion of cargo and especially of container business. The steady growth in container tonnage will require improvement of both landside and channel facilities. This study would generate alternative modifications to the existing federal navigation project and identify engineering, economic, and environmental details. The Port Authority itself plans the expansion of the port facilities; the ongoing Corps study is addressing whether the federal government should assume maintenance responsibilities for the new facilities.

Project Justification

The enhancement of Port Everglades would benefit its market hinterland, which is most of South Florida. The Port's 1983 Master Plan estimates the regional economic impact of Port Everglades activities to total $412 million. It also projects that by the Year 2000 economic impacts will be between $1.45 and $2.25 billion. Improvements of Port Everglades can substantially contribute to the well-being of the regional economy.

Recommendation

This study has been in the Program since FY 87. Funding is recommended. Adequate spoil disposal plans must be developed as part of the feasibility study.

Port Manatee Project
(Construction)

Estimated Federal Cost	$9,430,000
Estimated Non-Federal Cost	3,170,000
Federal Funds Through FY 88	500,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$5,000,000

Project History/Description

The Port Manatee Project is a proposal for federal assumption of maintenance dredging of the existing navigation channel constructed by the Manatee County Port Authority. The authorized project involves both removal of materials deposited in the channel since its construction and new construction at both ends of the channel to improve the safety of navigation. The channel dimensions would be 400 feet wide by 40 feet deep at mean low water (the same as originally constructed by the Port Authority) plus two feet allowable overdredging. Total channel length would be 2.65 miles, extending from the port facilities to the main Tampa Harbor Channel. The selected "Environmental Quality" plan of spoil disposal includes 100% upland disposal.

The Feasibility Report includes an attempt to mitigate for the environmental damage done by the dredging. Ten acres of an existing above-water spoil island would be lowered to -2 feet mean low water to compensate for the destruction of 6.6 acres of partially vegetated shallow bay bottom caused by the enlargement of the turning basin. Vegetation planting is not planned, but the Corps of Engineers believes that the lowered area will revegetate itself naturally. A detailed, site specific mitigation plan is to be developed by the Corps and local sponsor before construction.

Project Justification

The Port of Manatee now serves the local area both for oil imports and for phosphate exports. The Feasibility Report and the Environmental Impact Statement for the proposed project were published in 1979 and assumption of the project was recommended. The project was authorized for construction under the Water Resources Development Act of 1986.

Recommendation

This project has been included in the Public Works program for several years. Funding is recommended provided that the sponsor work with the State and the Corps in devising an adequate mitigation plan.

Port of St. Petersburg Basin/Channel Dredging Project
(Feasibility Study)

Estimated Federal Cost	$180,000
Estimated Non-Federal Cost	125,000
Federal Funds Through FY 88	130,000
Non-Federal Funds Through FY 88	75,000
State of Florida Request FY 89	$50,000

Project History/Description

The City of St. Petersburg submitted a request in FY 88 for funds to dredge the Port channel and basin. Although the current depth of 22 feet is sufficient for most of the ship traffic through the harbor, the Port seeks to promote the development of substantial cruise ship activity in St. Petersburg. This activity has a controlling depth need of 24-27 feet.

The Corps conducted a benefit/cost analysis of a 24-foot depth in 1981, and found that such a project, without cruise ship activity, could not be economically justified. An environmental and economic Reconnaissance Study was completed in early 1987 which recommended against federal participation. FY 89 funds would be used to restudy other potential markets, such as lumber.

Project Justification

A Comprehensive Plan developed by the city, as well as a Port Master Plan written by private consultants in 1982, indicate that growing tourism and resident population will generate increasing levels of cruise ship activity. While the two plans note that the Port is relatively unattractive due to geographic location, competition from more desirable ports, lack of facilities/space, and deed restrictions, there are advantages. These include a spill-over of cruise activity to the Port as other ports become congested, access to an attractive international airport, and proximity to an expanding tourist market in the Gulf of Mexico. Both plans look to an expansion of cargo handling as a secondary Port activity.

The City contends that existing tidal and wind conditions, as well as cruise ship operating experience, indicate that design considerations and known safety margins are inadequate. Dredging would provide navigational safety improvement.

Recommendation

Funding is recommended.

Stump Pass
(Preconstruction Engineering & Design)

Estimated Federal Cost	$375,000
Estimated Non-Federal Cost	$326,500
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$375,000

Project History/Description

The Gulf Coast Passes Study was initiated in 1978 and originally included a total of six passes. All but two of these passes, Stump Pass and Big Sarasota Pass, were subsequently eliminated from further consideration. The Stump Pass project is requested by Charlotte County. The project would involve dredging a 200-foot wide exterior channel to a depth of -8 feet MLW with a 2-foot overdepth and an 80-foot wide by 6-foot deep interior channel with a 2-foot overdepth. Renourishment of a nearby beach by spoil disposal has been suggested as an additional benefit. The proposed project has received a DER permit. Congressional authorization is necessary, unless the project is completed under the Corps' Continuing Authority Program.

Project Justification

In its Detailed Project Report, the Corps noted that the lack of adequate channel depths in Stump Pass has caused several problems:

1. Most area boaters are forced to use an alternate pass, thus causing inconvenience and increasing travel costs;

2. Inlet shoaling frequently restricts passage of Coast Guard Auxiliary vessels on emergency missions; and

3. The condition of Stump Pass makes it unsuitable as a harbor of refuge.

Potential dredging benefits include the establishment of a reliable pass in the area, greater tidal flushing of bay waters, increased boat usage, and beach renourishment.

Recommendation

This is a new request. Funding is recommended provided that permit requirements will be met.

BEACH EROSION CONTROL

Captiva Island Beach Nourishment

Delray Beach

Dinner Key Beach Landing (Dade County)

Ft. DeSoto Park Erosion Control

Ft. Pierce Beach

Longboat Key

Manatee County Beach Erosion

Monroe County Beach Erosion

Pinellas County (Indian Rocks Beach)

Sarasota County Beaches (Venice/Caspersen Beach)

Town of Palm Beach

Virginia Key Barrier Island Park (Dade County)

Watson Island Park Beach Erosion (Dade County)

Captiva Island Beach Nourishment
(Construction)

Estimated Federal Cost	$2,300,000
Estimated Non-Federal Cost	1,800,000
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$2,300,000

Project History/Description

Captiva Island is on Florida's southwest coast near Fort Myers. The Captiva Erosion Prevention District is requesting reimbursement of construction costs for 4.9 miles of beach restoration expected to be completed in 1988. The initial construction width will be 125 feet, which will adjust to a non-uniform design width of between 60 and 80 feet of additional beach.

Project Justification

In 1969, at the request of the Lee County Commission, the Corps prepared a study on beach erosion in Lee County. The study reported that the beaches were severely eroded and recommended a federal project of beach nourishment for erosion control. Historical records show over 700 feet of shoreline recession since 1906, with a maximum annual loss of more than 39 feet. Erosion rates measured from 1967 to 1979 are

three to four cubic yards per linear foot of beach per year. This project, by renourishing the beach area, would provide protection to upland property, provide hurricane and storm protection for portions of a road which is the only land access and emergency evacuation route, and provide additional public recreational area.

Recommendation

This project has been in the Public Works Program since 1983. Funding is recommended.

Delray Beach
(Reevaluation Report)

Estimated Federal Cost	$50,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$50,000

Project History/Description

Delray Beach, located on the Southeast coast in Palm Beach County, was restored in 1973. Maintenance nourishment occurred during 1978 and 1984. A General Design Memorandum was prepared in 1984. A 15-month follow-up study was completed in 1986 and a 27-month follow-up study is currently being prepared by the Corps.

The FY 89 request is for a study for the Corps of Engineers to prepare the documentation necessary to extend the federal authority from fifteen to fifty years. Also, the Corps needs funds to review the Detail Design Memorandum and engineering plans to be developed by the City.

The project requires Congressional authorization. It is scheduled for construction beginning in June, 1990. The City plans to do the advanced engineering and design work as well as construction. The FY 1990 request will be for reimbursement to the City for planning, engineering, and construction costs.

Project Justification

The renourished beach will protect upland structures from erosion and will provide additional recreational areas for residents and tourists who provide a major source of income for the area. A major benefit will be the protection of State Road A1A.

Recommendation

Support for the special study is recommended.

Dinner Key Beach Landing (Dade County)
(Construction)

Estimated Federal Cost	$90,000
Estimated Non-Federal Cost	108,450
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$90,000

Project History/Description

The Dinner Key Beach Landing project is located on the coast of the City of Miami. The project has two components: 1) the restoration of a beach and shoreline and 2) the construction of a wooden landing pier to provide access to a mole island located on the north side of the Dinner Key Basin. This island contains a sandy beach in need of expansion and is adjacent to what will be a protected swimming area. A piling barrier on the south side will provide protection to swimmers.

This project requires Congressional authorization.

Project Justification

The Dinner Key Beach Landing project addresses a coastal development need for satisfying an increasing demand for swimming, fishing, and boating in the area. This project will make improvements that will increase public access while renewing and expanding swimming and boating opportunities at the water's edge. This is in response to the need for a major bayside improvement program.

Recommendation

Funding is recommended, possibly under the "Section 103" program.

Fort DeSoto Park Erosion Control
(Study)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

Fort DeSoto Park is on Mullet Key at the southern end of Pinellas County and Tampa Bay. The County has invested $10 million in the public park and is requesting a study to determine means of controlling a severe erosion problem along 13,000 feet of the park's western shoreline.

Project Justification

The park receives over two million visitors each year. Restoring the beach would preserve this regional recreation facility and protect the economic activities dependent upon tourism and other beach-related activities. Possibly, the project may be accomplished by using suitable materials from the maintenance of the Tampa Harbor Channel. A study to evaluate this and other alternatives is desirable. However, the State does not support the offshore bar/island borrow area proposal, since it is unlikely that a permit for dredging of the island would be issued by the Florida Department of Environmental Regulation.

Recommendation

This proposal was included in the FY 88 program. Funding is recommended.

Fort Pierce Beach
(Reevaluation Report)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

This proposal by St. Lucie County is for the placement of 350,000-450,000 cubic yards of sand on the beach beginning at the south jetty of Fort Pierce Inlet and extending 1.3 miles to the south. The material would be taken from a borrow area 3,000 feet offshore. The beach to be nourished includes two public parks: South Shore Park (1,210 feet of beach frontage) and Surfside Park (550 feet of beach frontage). Both are fully open to public use.

The effect of sand movement in the longshore direction is most evident at Fort Pierce Inlet, where the beach just south of the inlet has receded an average of 4.3 feet a year since 1930, while during the same period, the beach on the north side has advanced seaward. Previous beach nourishment projects have preserved the beach on the south side from eroding so far inward as to destroy both private and public property. However, most benefits (88%) are attributable to recreation on the beach, rather than property protection. Project costs are planned to be divided almost equally between federal and non-federal interests.

Authorization for the nourishment project has expired and must be obtained. The Corps is presently conducting a Section 111 report to study mitigation of the loss of shoreline due to the federal navigation project.

Project Justification

Restoring the beach will preserve the existing recreational resource and protect capital investments. The two public beach parks in this area would continue to serve residents and visitors.

Recommendation

This study has been in the Program since FY 87. Study funding is recommended.

Longboat Key Beach Nourishment Project
(Preconstruction Engineering and Design)

Estimated Federal Cost	$474,600
Estimated Non-Federal Cost	3,513,800
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$474,600

Project History/Description

The FY 89 funding request is to complete construction planning for beach restoration and nourishment on central Longboat Key in Sarasota County. Continued recession of the shoreline is creating a situation which makes coastal development more vulnerable each year to tropical and winter storms. Presently, 2,890 feet of Gulf of Mexico Drive is directly endangered by storm waves.

The plan provides for the construction of a protective beach along 12,600 feet of shoreline between the Viente and Castillian condominiums, and it includes a beach monitoring program. The proposed project consists of a 50-foot wide beach berm with a crest elevation of 9 feet above Mean Sea Level. Initial beach fill would be 1,165,100 cubic yards. Periodic renourishment with 98,000 cubic yards of fill would be required every 8 years to replace that lost to erosion.

The Town of Longboat Key's participation is contingent upon the appropriation of funds by the Town of Longboat Key at the time of implementation of the project.

Project Justification

Currently, a major storm could cause substantial damage and threaten municipal infrastructure, including roads and water systems. This project would provide beach erosion control and protection against storm-induced flooding, and may stabilize and reverse the continual erosion of shoreline in this area. By reducing flood hazards, the plan would protect State Road 789, upland property and sole-source gas, water, and wastewater conduits. It would provide beach erosion control and an aesthetic beach for public use.

Recommendation

Funding is recommended provided that appropriate environmental concerns are addressed.

Manatee County Beach Erosion (Anna Maria Island)
(Construction)

Estimated Federal Cost	$5,400,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	100,000
Non-Federal Funds Through FY 88	200,000
State of Florida Request FY 89	$5,400,000

Project History/Description

The central and southern portions of Anna Maria Island are experiencing erosion. Local interests have constructed numerous seawalls, bulkheads, and other measures to prevent further shoreline recession. However, the uncoordinated application of protective structures has, in many instances, accelerated nearshore losses of littoral material. Manatee County, acting as project sponsor, is planning to accelerate the Corps' timetable by one year, allowing for planning in FY 88 and construction in FY 89. The proposed project is 3.9 miles in length and extends from Holmes Beach south to Longboat Pass. It includes groin reconstruction at Cortez Beach.

There have been problems in the past securing local matching money. With the passage of two damaging hurricanes in 1985, however, there is renewed commitment from the project sponsor and beneficiaries. In 1986 a local option 1¢ Tourist Development Tax was adopted by the County with the annual revenues dedicated solely to beach nourishment.

Project Justification

The improved beach would protect upland property, provide a recreational beach, and protect SR 789, the sole evacuation route on the Island.

Recommendation

Support for preconstruction planning is recommended. State support for project construction, however, is conditional based on the project's ability to meet permitting requirements.

Monroe County Beach Erosion Control
(Preconstruction Engineering and Design)

Estimated Federal Cost	$318,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 88	125,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$193,000

Project History/Description

This project has been requested by the City of Key West to restore Smathers Beach and to fill the adjacent east and west shorelines with sand, to perform periodic nourishment of the beach for 50 years, to construct two groins, and to relocate a boat ramp. The plan also includes filling nearshore depressions and seagrass planting. The overall project could eventually extend along 9,400 feet of beachfront.

Project Justification

The Corps Final Feasibility Report projected an average annual gain in recreational resources of $1,007,200 and an annual damage cost savings of $61,200. Compared to an annual cost of $597,900, this results in a benefit-cost ratio of 1.8:1.0. The project is expected to improve the local tourist economy and provide local employment benefits. The number of users of the beach is projected to increase to 450,000 per year by 1989.

Recommendation

Funding is recommended for continued planning and engineering of the entire 9400-foot stretch of the project. However, actual construction should be done in phases if supplemental studies demonstrate the need for additional recreational beach areas. The State's support is conditioned on the project meeting permitting requirements.

Pinellas County Beaches (Indian Rocks Beach)
(Construction)

Estimated Federal Cost	$20,000,000
Estimated Non-Federal Cost	21,700,000
Federal Funds Through FY 88	6,998,000
Non-Federal Funds Through FY 88	5,684,000
State of Florida Request FY 89	$4,000,000

Project Description/History

Congress authorized a review of the beach erosion control report on Pinellas County, Florida in 1976. The resolution authorized a periodic nourishment project for five barrier islands: Mullet Key, Long Key, Treasure Island, Sand Key, and Clearwater Beach Island. To date, funding has been used for projects on Sand Key including breakwater construction at Redington Shores and Indian Shores, nourishment projects at Redington Shores and N. Redington Beach, and reconstruction of a groin at Madeira Beach. Renourishment projects were also undertaken on Long Key.

During the past 10 years severe erosion has occurred along 22,000 feet of beachfront on Sand Key in Pinellas County. Some areas are devoid of beaches and have been armored with seawalls. The local project sponsor, Pinellas County, has requested funds for a three-phase beach restoration project. An Environmental Impact Statement entitled "Beach Erosion Control Project Review Study" for Pinellas County, Florida done by the Army Corps of Engineers addresses the three areas. Federal funds were provided in 1969 and 1973 for emergency beach fills to replace storm-eroded areas at Indian Rocks Beach.

Phase I is the FY 88 request. The project consists of nourishment of the southern 7,282 feet of Indian Rocks Beach.

Phase II of the overall project is being considered for FY 89. Pinellas County has submitted a FY 89 request of $4 million for nourishment of the northern half (7,282') of Indian Rocks Beach.

Project Justification

The project will provide storm protection for public and private properties, as well as Gulf Boulevard, a major roadway.

Recommendation

Funding is recommended. Support is conditioned on obtaining the required environmental permits.

Sarasota County Beaches (Venice/Caspersen Beach)
(Preconstruction Engineering and Design)

Estimated Federal Cost	$375,000
Estimated Non-Federal Cost	To Be Determined
Federal Funds Through FY 88	200,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$175,000

Project History/Description

Venice/Caspersen Beach is in Sarasota County on the west-central coast of Florida, about 50 miles southwest of Tampa. The county coastline consists of five barrier islands separated by tidal inlets.

In 1964, Congress authorized a study of beach erosion problems in Sarasota County. At the County's request, the study was deferred in 1970 but resumed in 1978. In April of 1984, the Corps of Engineers released the project's Feasibility Report and Environmental Impact Statement. The report has a favorable benefit/cost ratio, especially for Venice/Caspersen Beach. Beach erosion problems are particularly severe in that area. The most likely source of sand for the project is offshore. Project authorization occurred in 1986.

Project Justification

Local governments and private property owners have been renourishing beaches and building beach erosion control structures in Sarasota County for much of this century. In spite of these efforts, some of the County's beaches have eroded by more than 200 feet in the last 100 years. Sarasota County is experiencing explosive population growth, placing additional demands on existing beaches. The destruction of abutting property improvements (including residences, multi-family developments, public roadways, and utility facilities) could be prevented. The Sarasota County Beaches Project would help meet these goals.

Recommendation

This project has been in the Program since FY 85. Funding is recommended. Support is conditioned on the sponsor obtaining the required environmental permits.

Town of Palm Beach - Nourishment
(Preconstruction Engineering and Design)

Estimated Federal Cost	$350,000
Estimated Non-Federal Cost	
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$350,000

Project History/Description

Public beaches at the Town of Palm Beach have undergone extensive erosion. At high tide the beaches are submerged. As local sponsor, the Town is proposing a 3-mile renourishment project along the Mid-Town segment of Palm Beach. The 3-mile project is described in the April, 1987 Corps report entitled "Beach Erosion Control Projects for Palm Beach County, Florida - General Design Memorandum (GDM) with Environmental Impact Statement." FY 1989 funds would be used to evaluate geotechnical work done by the local sponsor as part of a Detail Design Memorandum. The sponsor plans to request reimbursement funds for construction of the project in FY 1990.

Project Justification

Funding will be used to evaluate geotechnical and engineering studies undertaken by the local sponsor.

Recommendation

This proposal was included in the FY 88 Program. Funding for the study is recommended.

Virginia Key Barrier Island Park (Dade County)
(Study)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	"
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$50,000

Project History/Description

This is a study intended to help protect and enhance approximately 1.3 miles of the Virginia Key Park Barrier Island shoreline along the Atlantic Ocean. It involves placement of riprap, reconstruction of existing groin fields, and renourishment of the existing beach. Authorization for a re-study is needed.

Project Justification

Completion of this project would have three results:

(1) Preservation of Virginia Key Park as a coastal barrier island which protects a major portion of downtown Miami;
(2) Enhancement of Virginia Key Park as a major resource based recreational facility for Dade County's 1.7 million residents; and
(3) The relocation of a beach which will significantly reduce the dangers to swimmers due to a sharp drop off and swift currents.

Also, the placement of riprap will reduce the erosion and resulting turbidity and sedimentation.

Recommendation

Funding is recommended. Support for the project is conditioned on obtaining the required environmental permits.

Watson Island Park Beach Erosion (Dade County)
(Construction)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	"
Federal Funds Through FY 88	0
Non-Federal Funds Through 88	0
State of Florida Request FY 89	$50,000

Project History/Description

Watson Island is a spoil island located off the coast of Miami. The purpose of this one-year construction project is to remove the existing unconsolidated rubble and debris, regrade the site, place small amounts of fill to level the shoreline, and install approximately 1,300 linear feet of riprap to stabilize the shoreline along the badly eroded northern shore of Watson Island Park. This publicly-owned park is adjacent to the Intracoastal Waterway which generates significant boat traffic. Wakes from boats, as well as natural forces, are causing serious erosion and sedimentation problems.

A congressional resolution authorizing the Corps to undertake this work is needed.

Project Justification

The park is extensively utilized by area residents and visitors. The shoreline protection will preserve a valuable tourist asset since it is located directly across from the Port of Miami, which is the largest passenger port in the nation.

Recommendation

Funding is recommended, possibly under "Section 103".

ENVIRONMENTAL RESTORATION AND ENHANCEMENT

Biscayne Bay Survey Review

Lower Hillsborough River Water Quality Enhancement

Six Mile Cypress

Biscayne Bay Survey Review
(Study)

Estimated Federal Cost	$1,692,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 88	240,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$700,000

Project History/Description

This study is a comprehensive review of environmental impacts from federally-authorized and constructed projects in and adjacent to Biscayne Bay in Dade County, Florida. The Corps of Engineers, acting as the lead federal agency in cooperation with the Federal Department of Transportation, is reviewing existing projects such as the Intracoastal Waterway (ICW), Government Cut, Bakers Haulover Inlet, the Central and Southern Florida Flood Control Project, and causeway construction to determine whether these and other federally-authorized projects are having a detrimental impact upon Biscayne Bay. The reconnaissance survey recommended five areas for further study:

1. Snake Creek freshwater discharge;
2. Sediment transfer through Haulover Inlet;
3. Mowry Canal freshwater discharge;
4. Miami River and canal freshwater discharge and sediment transport into the bay; and
5. Spoil island and shoal impacts on turbidity.

Project Justification

Biscayne Bay and the adjacent shoreline have been subjected to intense alterations from federally-authorized construction projects. The cumulative impacts of these projects on Biscayne Bay are not known. However, locally-funded studies have determined that water quality in the bay is poor, especially north of Rickenbacker Causeway. Excessive turbidity and reduced flushing are major problems. This study is needed for the development of guidelines for future management of Biscayne Bay's natural resources. A successful study will result in improved environmental quality of Biscayne Bay and enhancement of recreational opportunities.

Recommendation

This study has been in the Program since FY 81. Funding is recommended.

Lower Hillsborough River Water Quality Enhancement
(Reconnaissance Study)

Estimated Federal Cost	$100,000
Estimated Non-Federal Cost	0
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$100,000

Project History/Description

The City of Tampa is proposing a study to assess whether periodic dredging on the lower Hillsborough River would enhance water quality. Bottom sediments in this river stretch are composed of thick organic muds with accumulations of heavy metals, petroleum hydrocarbons, and other toxic chemicals. This material has accumulated primarily due to municipal sludge discharges and stormwater runoff. The existing poor quality of the river sediments contributes to a high sediment oxygen demand. Dissolved oxygen levels in the lower Hillsborough River violate State water quality standards up to 60% of the time. The National Urban Runoff Program, as well as a city-sponsored biological study of river sediments, indicate that periodic dredging of the lower Hillsborough River would improve water quality.

The City of Tampa has allocated over $40,000 for additional studies to supplement this project.

Project Justification

Periodic dredging of the lower Hillsborough River can be expected to significantly improve water quality. This, in turn, should also benefit Hillsborough Bay, one of the state's most degraded estuaries. The City of Tampa has recently undertaken a number of actions designed to improve and protect the Hillsborough River and Tampa Bay (including Hillsborough Bay). This project will complement these initiatives. This study is similar to several other completed Corps studies of altered river systems in the state, including the Miami River and the St. Johns River.

Congressional study authorization is necessary.

Recommendation

This study was in the FY 88 Program. Support is recommended.

Six Mile Cypress
(Continued Planning and Engineering)

Estimated Federal Cost	To Be Determined
Estimated Non-Federal Cost	"
Federal Funds Through FY 88	0
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	$150,000

Project History/Description

The purpose of this effort is the preservation and management of the Six Mile Cypress Strand in Lee County by two means: 1) construction of water control structures to prevent overdrainage and 2) acquisition of environmentally sensitive land between Daniels Road and Ten Mile Canal. The Six Mile Cypress Strand is one of the last major relatively-undisturbed cypress areas in Lee County. The strand is located approximately three miles southeast of Fort Myers and runs from State Road 82 southwesterly for ten miles to its confluence with Ten Mile Canal. Over the past several years, developmental pressures have begun to encroach upon the strand. Overdrainage has occurred and exotic vegetation (Melaleuca) has begun to replace the native cypress.

Lee County has purchased most of the strand and desires to obtain the remaining areas between Daniels Road and Ten Mile Canal. The County has also constructed temporary structures at these two locations to slow the rate of overdrainage. The Army Corps of Engineers completed a water resources study of the project area in May, 1986. The Corps study advises against Federal participation at this time.

Project Justification

The Six Mile Cypress Project would protect a unique natural cypress strand from overdrainage and enhance new cypress growth in areas which have historically supported such vegetation. This cypress strand would also provide a natural resource buffer between the Ft. Myers Regional Airport and the urbanized Fort Myers area.

Developmental pressures adjacent to the Six Mile Cypress Strand could adversely affect the strand's capability to retain stormwater runoff and to recharge groundwater supplies. In addition, as developmental pressures occur, nearby land values increase and could affect the land acquisition phase of this project.

Recommendation

This project has been in the Program since FY 79. Funding is recommended.

Addendum

Vero Beach (Indian River County Beach Nourishment)
(Construction)

Estimated Federal Cost	$5,540,000
Estimated Non-Federal Cost	4,500,000
Federal Funds Through FY 88	550,000
Non-Federal Funds Through FY 88	0
State of Florida Request FY 89	5,540,000

Project History/Description

Indian River County has requested renourishment along 2.65 miles of coast at Vero Beach. This project was authorized in 1986. There are two main reasons why the shoreline of Indian River County is eroding. The first is the general rise in sea level being observed worldwide. The second is that the construction of Sebastian Inlet Jetty at the northern end of Sebastian Inlet State Park has blocked the natural southerly movement of offshore sand.

The need for the project was emphasized in late 1984, when a major storm caused severe erosion along much of Florida's south Atlantic Coast. Damage to private and public lands in this area was estimated at $4.6 million.

Project Justification

Benefits from beach nourishment at Vero Beach are the prevention of storm damage to private and public property, and the reduction of the need for storm protection structures, such as seawalls, revetments, groins, bulkheads, etc., which can lead to further beach erosion. The addition of recreational space is an added benefit.

Recommendation

This proposal has been included in the Public Works Program since FY 1983. Funding is recommended; however, support for this project is conditioned on a favorable review of the project and EIS.

Statement of South Florida Water Management District

The environmental restoration of the Kissimmee River in Florida is one of the nation's most ambitious attempts at restoring environmental values to a major river system. If successful, this project could serve as a model to improve other channelized systems that have lost many of their environmental values. Certain improvements to the Kissimmee River have already been initiated with state funds alone, however, this project urgently needs Federal support for it to be a success.

The State of Florida Congressional Delegation Members and Florida Department of Environmental Regulation Secretary Dale Twachtmann are scheduled to testify before the Energy and Water Development Subcommittee regarding the State's FY 1989 Public Works Funding Program and the Kissimmee River Restoration Project on April 14th at 2:30 p.m. I would like to further support the State of Florida's efforts to provide environmental improvements to the Kissimmee River by attaching my testimony as part of the record before the Appropriations Subcommittee. It is my hope that the State of Florida and the Federal Government can work together to complete this important water resource project.

Mr. Chairman and Members of the Committee I am pleased to offer testimony regarding environmental improvements to the Kissimmee River Project. Last year the Kissimmee River was nominated by the South Atlantic Division of the U.S. Army Corps of Engineers for the Water Resources Development Act of 1986 Section 1135 funding. Two million dollars was earmarked for Kissimmee River improvements in the Energy and Water Development Appropriation Bill Conference Report, and was included as part of the lump sum appropriation in the Construction, General of the Energy and Water Development Appropriation Act of 1988 (P.L. 101-202). I am here to request that this committee appropriate funds for the Kissimmee River Improvement Project and to place in the Appropriations Act specific language directing the Secretary of the Army to carry out the Kissimmee River Improvement Project with the funds appropriated.

The Kissimmee River is a vital link in the Kissimmee River-Lake Okeechobee-Everglades watershed. The Kissimmee River Floodplain extends for 50 miles from the Kissimmee Lakes to Lake Okeechobee in the heartland of Florida. The River in its channelized form has provided flood control and allowed large tracts of former floodplain wetlands to be utilized for grazing. It also provided for a quick navigable route from Central Florida to Lake Okeechobee. However, the loss of important environmental values has resulted in the proposal to restore the river channel to its former meandering path.

The Kissimmee River Project is a landmark environmental improvement project that provides for environmental enhancement while not compromising flood protection to the upper basin. If successful this project could serve as a model to retrofit other channelized systems that have also lost many of their environmental values. With the project installed there is a potential to restore over 32,000 acres of productive marshland habitat and restoration of over two thirds of the entire 98 miles of river oxbows.

Certain improvements to the Kissimmee River have already been initiated with state funds alone, however, this project urgently needs Federal support for it to be a success. Future efforts entail a wide array of structural and operational improvements likely to exceed 50 million dollars. We are relying on the federal government's financial assistance and expertise in the water resource management area to restore and protect this nationally important resource. Specifically, we are requesting that Congress direct the U.S. Army Corps of Engineers to begin implementation of the Kissimmee River environmental improvements by making available to the State of Florida through the South Florida Water Management District, 7.2 million dollars in funds for FY 1989. We believe that with these funds and the South Florida Water Management District/U. S. Army Corps of Engineers partnership, we can substantially recreate one of the nation's great rivers.

ADDITIONAL PREPARED STATEMENTS RECEIVED FOR INCLUSION IN THE RECORD

Senator JOHNSTON. And I want to put in the record several statements relating to navigation on the Delaware River, as well as other statements in the New York-New Jersey region.

[The statements follow:]

STATEMENT OF THE JOINT EXECUTIVE COMMITTEE FOR THE IMPROVEMENT AND DEVELOPMENT OF THE PHILADELPHIA PORT AREA

IDENTIFYING REMARKS

The Joint Executive Committee for the Improvement and Development of the Philadelphia Port Area is port-affairs spokesman for twenty-four Delaware Valley civic and trade associations whose names appear at the bottom of this letterhead page. Organized in 1888, this Committee has participated in and promoted all major navigation improvements to the Delaware, Schuylkill and Christina Rivers and to the Chesapeake and Delaware Canal. The members pay no dues beyond the nominal amounts needed to cover the organization's administrative expenses, and its officers serve without compensation.

Our Delaware River marine terminals in Camden, Gloucester, Pettys Island, Morrisville, Philadelphia, Chester and Wilmington; located in three states and identified collectively as the Ports of Philadelphia; handled 68,476,703 tons of international cargo during calendar year 1987. This commerce generated more than two billion dollars into the economy of the tri-state Delaware Valley region.

Seven major oil refineries; the largest refinery complex on the east coast, plus one of the nation's largest steel mills are located along the Delaware River. In addition to the strong support these facilities lend to the economy and to national defense, the Philadelphia Naval Base is strategically located at the confluence of the Delaware and Schuylkill Rivers. In 1987 waterborne commerce in the Ports of Philadelphia produced $409,757,897 for the Federal Government in Customs Receipts, plus additional revenue generated by the new ad valorem tax. For these reasons we solicit your support for our important and necessary navigation projects.

SUMMARY

The Joint Executive Committee recognizes the need for fiscal restraint. We also have been assured by the Corps of Engineers that the funds contained in the Administration's Operations and Maintenance Budget will provide adequate maintenance of our federal navigation projects. Although the amount is approximately $4 million under the FY '88 program we are able to live with the amounts in the FY '89 Budget outlined below:

OPERATIONS AND MAINTENANCE

Delaware River, Philadelphia to the Sea	$18,264,000
Delaware River, Philadelphia to Trenton	667,000
Schuylkill River	2,530,000
Wilmington Harbor	7,362,000
Chesapeake & Delaware Canal	20,263,000
Total	$49,086,000

In addition we also are in agreement with the budgeted amount of $316,000 to continue the Delaware River Comprehensive Navigation Study.

FULL TESTIMONY

Delaware River - Philadelphia to the Sea and Philadelphia to Trenton (40' Project)

The navigable channel from Trenton to the sea is 120 miles long and it makes possible the economies inherent in waterborne commerce to be brought to the doorsteps of one of the largest urban areas of the United States. Adequate maintenance of the 40-foot channel is of utmost importance to the Ports on the Delaware River. This conduit of commerce provides over 99,000 much needed jobs to the area, over 2 billion dollars in business revenue and $91 million dollars in local tax revenues. It is only through adequate channel maintenance, which is dependent on adequate funding, that our regional economy will continue to

prosper. Statistical data reveals total waterborne commerce on the Delaware River exceeds 100,000,000 tons per year. The continued adequate maintenance of the main ship channel is necessary to accomodate the existing facilities and the recent new and expanded facilities which now exist on the Delaware River. Recent expansions have taken place in connection with the Holt Terminal in Gloucester, New Jersey; the new Pettys Island Terminal in Pennsauken, New Jersey, which provides regular container service to and from Puerto Rico and also participates in international commerce; the recently expanded facilities and ever growing cargo tonnage at the South Jersey Port Corporation and which portends to further increase as a result of the completion of the new cost-sharing project in the vicinity of Camden, New Jersey; and the enlarged port activity at Penn Terminal in Chester, Pennsylvania, as well as Wilmington Harbor, Delaware, as a result of their modernized facilities which has raised their cargo level. In view of this we support the appropriation of $18,264,000 for the Delaware River - Philadelphia to the Sea project and $667,000 for the Delaware River - Philadelphia to Trenton project -- representing the main stem of the Delaware River and which of course is essential in serving the marine terminals along the length of the tributary.

Schuylkill River (33' and 26' Projects)

Major refineries continue to operate on the Schuylkill River. Petroleum is delivered for processing and the product is dispatched from the petroleum terminals. The U.S. Gypsum Company plant on this waterway receives their raw gypsum rock by vessel from Canada. These users, as well as the other users of this waterway, continue to require adequate project maintenance to continue operation. The Corps' requirement of $2,530,000 for this maintenance while below the FY '88 requirement is considered reasonable.

Chesapeake and Delaware Canal (35' Project)

The Chesapeake and Delaware Canal continues to be a vital link between the Ports of Philadelphia and Baltimore. This canal, which is the busiest man-made sea level canal in this nation, also saves approximately 24 hours per trip for vessels plying between Baltimore and other North Atlantic ports. Commerce is approximately 16 million tons per year. We consider that the Corps of Engineers requirement for this project of $7,362,000 for FY '89 is reasonable. It should be noted that this allocation is approximately $5,000,000 below the FY '88 Budget for this project.

Wilmington Harbor (38' Project)

The Port of Wilmington is a substantial economic asset to the City of Wilmington, the State of Delaware and the surrounding region. The Port's activities provide an estimated 1,000 jobs for area citizens and account for over $100 million in revenue impacts. The Port of Wilmington has become a principal port in the North Atlantic area for the import of fruit, particularly bananas and orange juice for distribution in both the northeastern United States and Canada. This is a result of substantial capital investments to the facilities at this port. It should be noted that the Wilmington Harbor port deepening project is cost-shared.

The budget request of $7,369,000 is considered to be reasonable and we have been assured will enable the Port of Wilmington to continue its dynamic progress; assuring additional economic growth to the region. It should be noted that the Corps of Engineers' request of $7,369,000 is almost $5,000,000 less than the FY '88 program expenditures. Included in the FY '89 programs are one time expenditures for increasing disposal area capacity.

General Investigations

The Joint Executive Committee continues to be intensely interested in the need to bring to an early conclusion studies underway in connection with the Delaware River Comprehensive Navigation Study. Our community has demonstrated that we will support, with cost-sharing, worthwhile projects resulting from these studies. A recent example is the contribution of over $1,000,000 by the South Jersey Port Corporation for the Camden and vicinity project which is being completed in FY '88.

The Joint Executive Committee also considers that some deepening of the Delaware River is warranted and is convinced that required cost-sharing will be forthcoming. However, progress demands completion of the Corps studies now underway. In this same category is a requirement for early completion of studies to deepen the Camden and vicinity project to 40 feet, completion of Salem River studies and other scheduled studies. In view of this we support the $316,000 in the FY '89 budget to continue the Delaware River Comprehensive Navigation Study.

JOINT STATEMENT OF THE NEW JERSEY DEPARTMENT OF COMMERCE, ENERGY AND ECONOMIC DEVELOPMENT, MARITIME ADVISORY COUNCIL OF NEW JERSEY, AND THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

REPRESENTING ALSO:

BAYONNE CHAMBER OF COMMERCE (NJ)
CITY OF SALEM MUNICIPAL PORT AUTHORITY (NJ)
DELAWARE RIVER AND BAY AUTHORITY
DELAWARE RIVER PORT AUTHORITY
HUDSON COUNTY CHAMBER OF COMMERCE (NJ)
INTERNATIONAL UNION OF OPERATING ENGINEERS
JOINT EXECUTIVE COMMITTEE FOR THE IMPROVEMENT OF THE DELAWARE (PA)
MARITIME ASSOCIATION OF THE PORT OF NEW YORK AND NEW JERSEY
MARINE TRADES ASSOCIATION OF NEW JERSEY
NEW JERSEY ALLIANCE FOR ACTION
NEW YORK-NEW JERSEY PORT PROMOTION ASSOCIATION
PENJERDEL (PA, NJ, DEL) COUNCIL
PILOTS ASSOCIATION FOR THE BAY AND RIVER DELAWARE
PORT AUTHORITY OF NEW YORK AND NEW JERSEY
SAVE OUR PORT COALITION (NY, NJ)
SOUTH JERSEY PORT CORPORATION
UNITED NEW JERSEY SANDY HOOK PILOTS BENEVOLENT ASSOCIATION
UNITED NEW YORK SANDY HOOK PILOTS BENEVOLENT ASSOCIATION

Mr. Chairman and members of the Committee, I am Borden R. Putnam, Commissioner of the New Jersey Department of Commerce, Energy and Economic Development and Honorary Chairman of the New Jersey Maritime Advisory Council.

I am here today to endorse that which is presently included in the President's budget and will address those Navigation, Flood Control, Shore Protection and Water Supply projects, which if not sufficiently funded, will have an adverse effect on the economic well-being of our state.

Summary of Recommendations

In addition to the projects which we support as funded in the budget, the New Jersey Maritime Advisory Council wishes to recommend an additional appropriation of $7,066,000 in Federal funds in FY'89 allocated among nine projects. The federal budget allotment for these nine projects is $2,334,000. The following statement shows project recommendations:

PROJECT	Budget Request	Local Interest
Navigation		
Arthur Kill Channel Extension to Carteret, NY & NJ	$ 175,000	$ 600,000
Great Egg Harbor & Peck Beach, NJ	---0---	50,000
New York Harbor Collection and Removal of Drift, NY & NJ	1,409,000	5,000,000
Townsend Inlet and Seven-Mile Beach, NJ	---0---	200,000
Flood Control		
Absecon Island, NJ	---0---	250,000
Coast of New Jersey Erosion and Storm Effectsd Study	---0---	1,000,000
Delaware Bay Coastline, DE & NJ	---0---	500,000
Passaic River Main Stem, NY & NJ	750,000	1,500,000
Planning Assistance		
Section 22, P.L. 93-251, NJ	---0---	300,000
Totals	$2,334,000	$9,400,000
Difference	$7,066,000	

ARTHUR KILL CHANNEL EXTENSION TO CARTERET, NJ & NY (STUDY)

Although we were pleased to see this project included in the FY'89 budget, it was our belief that the project would be designated a "post authorization non-cost shared General

Design Memorandum" effort and not a "cost shared feasibility study." The already heavily industrialized Arthur Kill Extension handles more tonnage than the preceeding increment. Therefore, it is obvious that the benefit-to-cost ratio must be at least equal to or greater than the 4 to 1 ratio of the preceding reach.

We wish to request that an additional $425,000 be provided for this project in FY'89 to promote the preferred post authorization preconstruction engineering & design phase and advance what we perceive the intent of the Congress to be; namely, a heightened and straight-forward effort towards early construction.

BARNEGAT INLET, NEW JERSEY (CONSTRUCTION)

Channel shoaling, wave activity and numerous marine hazards have created dangerous navigational problems at the Barnegat Inlet. These serious shortcomings impose limitations on the safe access through this inlet which has over 800,000 annual transits.

We wish to express our support for the FY'89 budget request of $7.8 million to continue the construction of this improvement plan for which the state of New Jersey has in escrow the necessary funds to cost-share this anticipated appropriation.

CAPE MAY INLET TO LOWER TOWNSHIP, NEW JERSEY (CONSTRUCTION)

This project is important to the shoreline both in and below Cape May. Cape May has suffered severe erosion since the construction of the Cape May Inlet jetties in 1911. This has been to the detriment of the recreation industry, boating and fishing and is responsible for repetitive storm related flood damages. The Corps of Engineers recommended that the work be done and we support the FY'89 budget recommendations of $1 million which will be cost-shared with available state funds.

DELAWARE RIVER COMPREHENSIVE NAVIGATION STUDY NJ, PA & DE (STUDY)

The Delaware River Navigation System includes six deep-draft navigation projects serving the Ports of Philadelphia, Pennsylvania; Camden, New Jersey; Trenton, New Jersey; and Wilmington, Delaware.

We wish to support the FY'89 budget recommendation of $316,000 to continue the Delaware River comprehensive Navigation Study and advance the studies to deepen both the Maurice River and the Salem River in New Jersey, and investigate improvements throughout the entire study area.

DELAWARE RIVER VICINITY OF CAMDEN, NEW JERSEY (BECKETT STREET TERMINAL), (PE&D)

The Beckett Street Terminal is located in Camden, New Jersey on the east bank of the Delaware River. The Corps has studied and recommended a deepening from 37 to 40 feet in order to permit efficient transit of deep-draft vessels.

We wish to express our support for the FY'89 budget request of $30,000 to complete the General Design Memorandum portion of the preconstruction engineering and design phase of this project and are pleased that it is scheduled for completion in March, 1990.

GREAT EGG HARBOR & PECK BEACH, NEW JERSEY (PE&D)

This multiple purpose navigation and shoreline erosion control project provides for the modification of the existing beach erosion project at Ocean City, NJ.

In September, 1987 the Corps of Engineers completed a re-evaluation study and recommended a reduced scope project consisting of dredging, beachfill and periodic beach nourishment.

We wish to request that this project, for which the state intends to provide the items of local cooperation, be appropriated in the amount of $50,000 for FY'89 so that the preconstruction engineering and design phase can be completed.

KILL VAN KULL AND NEWARK BAY CHANNEL, NEW YORK AND NEW JERSEY (CONSTRUCTION)

This is a navigation project to deepen the existing 35-foot channels in the Kill Van Kull and Newark Bay to its first phase depth of 40 feet below mean low water (MLW). The project would serve Port Newark and Port Elizabeth marine terminals with several widenings and a turning basin.

We wish to fully support the budget request of $54,300,000 for this long awaited project. We are pleased with the progress of construction that has been achieved in both the past and current fiscal year and are grateful for the adequate funding that will ready this 40 foot project for completion in FY'89.

NEW JERSEY INTRACOASTAL WATERWAY (STUDY)

We wish to support the budget request of $125,000 for FY'89, which will be used for a study to assess the feasibility of specific design alternatives for this project, and for which the state of New Jersey is willing to provide the requisite cost-share.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT, NEW YORK & NEW JERSEY (CONSTRUCTION)

This project calls for the collection and removal of more than 29 million cubic feet of drift. The budgeted sum of $1,409,000 does not represent the true annual capability of this project, but a grim picture of a popular project that will reach its authorized funding ceiling in FY'89.

In the hope that renewed funding becomes available through the passage of pending legislation, we request that $5 million be appropriated in FY'89 to permit the Corps of Engineers to resurrect program work that is presently threatened with indefinite deferral.

PORT JERSEY CHANNEL, NEW JERSEY (PRECONSTRUCTION ENGINEERING & DESIGN)

This project will deepen a 35-foot access channel (non-federal) to a 41-foot channel (federal) providing safe and economical use of this waterway at all stages of tide. The Port Jersey Access Channel presently serves the Global Marine Container Terminal, which in turn serves 13 shipping lines. In 1987, this facility handled 320 vessel arrivals with 214,172 container units. This cargo activity alone generates 400 jobs and a payroll of $16 million.

We wish to express our support for the FY'89 budget request of $500,000 to continue the preconstruction engineering and design effort which is scheduled for completion in June, 1991.

TOWNSEND INLET & SEVEN MILE BEACH, NEW JERSEY (PRECONSTRUCTION ENGINEERING & DESIGN)
The existing project provides for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway, two groins and beach flood control fill at Avalon. Local interests have constructed two groins and the south jetty at Townsend Inlet.

We wish to recommend for consideration that $200,000 be appropriated in FY'89 to initiate the preconstruction engineering and design phase of this project, which was reauthorized with provisions for construction of separable elements under Section 831(3) of the Water Resources Development Act of 1986.

ABSECON ISLAND, NEW JERSEY (PRECONSTRUCTION ENGINEERING AND DESIGN)
Hurricane "Gloria" in September, 1985 resulted in $6.6 million in damages and Absecon Island was once again included in the presidential declaration of a Federal Disaster area.

In view of this, we wish to recommend that $250,000 be provided in FY'89 to begin preconstruction engineering and design work for this flood control project, which the state of New Jersey is prepared to fund.

BEATTIE'S DAM, PASSAIC RIVER, NEW JERSEY (STUDY)
This study will determine the feasibility of providing local flood control protection measures and/or modifications to the existing non-federal dam. The most severe, recent flood in April, 1984 resulted in damages estimated at nearly $70 million.

Local interests have requested that Beattie's Dam be modified, and we wish to express our support for the FY'89 budget request of $300,000 to study this project.

COAST OF NEW JERSEY EROSION AND STORM EFFECTS STUDY (STUDY)
The Corps of Engineers was recently authorized to undertake a large Comprehensive Study of Coastal Resources along the entire Coast of New Jersey. This study was prompted by numerous problems along the New Jersey Coast during the 1987 summer tourist season. Included in this study will be the development of a physical, environmental, and an engineering data base on coastal area changes and processes as the basis for actions and programs to prevent the harmful effects of shoreline erosion and storm damage. Additionally, recommendations will be developed for prevention of water quality degradation and pollution of New Jersey coastal waters. This study is strongly supported by the state and our Congressional representatives. It is requested that $1 million be provided in FY'89 to initiate the study.

DELAWARE BAY COASTLINE, NEW JERSEY AND DELAWARE (STUDY)
This study will provide information on the long-term shoreline changes which will serve as a basis for sound coastal planning decisions. Since the data and solutions are urgently needed in order to deal with the beach erosion/flooding problems in the Delaware Bay area and to implement remedial measures, we wish to request an appropriation of $500,000 in FY'89 to initiate this study.

HACKENSACK RIVER BASIN, NEW JERSEY AND NEW YORK (STUDY)
This study will determine the need for flood control improvements in the Hackensack River Basin including the Meadowlands. It is estimated that over $440 million in damage would result from a 100-year tidal flood.

The $400,000 for a study of the Hackensack River Basin flood control feasibility is an item which we support. However, we would like to point out that New Jersey views this particular survey as an ongoing priority, having been initiated prior to the passage of the Water Resources Development Act of 1986. As such, this project should not require cost-sharing for the feasibility study.

LIBERTY STATE PARK LEVEE AND SEAWALL, NEW JERSEY
We wish to express support for the FY'89 budget recommendation of $4,778,000 to continue construction of the Liberty State Park project. Budgeting of the requested funds, which the State of New Jersey is prepared to match, will allow for the expeditious completion of this highly visible project during FY'89.

LOWER SADDLE RIVER, NEW JERSEY (PE&D)
Major flooding of the Saddle River in recent years has plagued seven communities in New Jersey with flooding damage in excess of $6 million annually.

We wish to support the FY'89 budget request of $750,000 which will be used to continue the PE&D phase of this project.

MOLLY ANN'S BROOK, NEW JERSEY (PE&D)
We wish to support the FY'89 budget request of $250,000 which will be used to initiate the preconstruction engineering and design phase to include the development of a plan of study, schedule and cost estimates, initiation of topographic data collection, as well as technical studies. This PE&D effort is scheduled for completion in June 1984.

PASSAIC RIVER EAST BANK STABILIZATION, NEW JERSEY (STUDY)
The proposed plan would stabilize the erosion of the east bank of the lower Passaic River, control over bank flooding and enhance and create recreational opportunities in a highly urbanized area.

We wish to support the FY'89 budget request of $200,000 to initiate this feasibility study and request that this study be integrated into the Passaic River Main Stem project and implemented concurrently.

PASSAIC RIVER MAIN STEM, NEW JERSEY & NEW YORK (PE&D)
The Passaic River Basin encompasses 935 square miles in norther New Jersey and Southeastern New York State. The plan has been developed to protect over 30,000 structures in the critical flood problem area. The most severe, recent flood occurred in April 1984, claiming two lives, with damages estimated at $360,000,000.

While it is particularly gratifying to see funding in the FY'89 budget request for this project, it is noted that the level of funding should be increased. We wish to request that an additional $750,000 be provided to allow the PE&D phase to move forward toward solving this major flooding problem at an accelerated pace.

PINE BROOK, MANALAPAN TOWNSHIP, NEW JERSEY (PE&D)

This planning and engineering effort addresses the need for flood control improvements along Pine Brook. FY'89 funding was used to initiate the planning and engineering portion of the study and we wish to support the FY'89 budget recommendation of $75,000 to provide the funding to complete the PE&D portion of this project for which our state has expressed its support.

POPLAR BROOK, NEW JERSEY (STUDY)

Fiscal year 1988 budget funds are being used to initiate the reconnaissance study and thereby determine the need for more detailed studies, to obtain local cost-sharing agreements, and to develop a plan of study for the feasibility phase.

We wish to support the FY'89 budget request of $50,000 which will be used to initiate the next phase, the feasibility study.

RAMAPO AND MAHWAH RIVERS, MAHWAH, NEW JERSEY & SUFFERN NEW YORK (CONTRUCTION)

We wish to support the FY'89 budget request of $300,000 which will be used to begin the construction phase of this flood control project. The state of New York and the state of New Jersey have each indicated their intent to comply with the required items of local cooperation.

RAMAPO RIVER AT OAKLAND, NEW JERSEY (PE&D)

The Ramapo River, particularly in the Townships of Oakland, Wayne and Pompton Lakes, New Jersey has experienced chronic flooding in ten of the last 16 years.

The state of New Jersey has indicated its willingness to act as the non-federal cooperating agent, and we wish to express support for the FY'89 budget request of $470,000 to continue the preconstruction engineering and design effort towards a September, 1992 completion.

RARITAN RIVER BASIN, GREEN BROOK SUB-BASIN, NEW JERSEY (PE&D)

In addition to protection for the Lower Green Brook Sub-Basin, the state of New Jersey has expressed a preference for the authorized plan which would also provide protection to the upper basin communities as well.

In an effort to move this project to its scheduled completion date of January, 1992, we wish to support the FY'89 budget request of $1.5 million to continue the preconstruction engineering and design studies and preparation of the General Design Memorandum.

SANDY HOOK TO BARNEGAT INLET, NEW JERSEY (CONSTRUCTION)

We wish to support the FY'89 budget request of $1.2 million for this flood control/erosion project which, will be used to complete the PE&D work needed to award the first construction contract for Section I and to continue the PE&D phase for Section II. The state of New Jersey has stated its willingness to provide the items of local cooperation and has escrowed the requisite state share to demonstrate a committment to this project.

FRANCIS E. WALTER DAM MODIFICATION, PENNSYLVANIA (CONSTRUCTION)

F.E. Walter Dam is located on the Lehigh River, 1/2 mile downstream of confluence of the Lehigh and Bear Creek in Luzerne and Carbon Counties, Pennsylvania and about 75 miles upstream of confluence of the Lehigh and Delaware Rivers at Easton. The water supply project is included in the New Jersey water supply master plan.

The modification to the existing dam, to provide additional storage for water supply and recreation, will include raising the dam by 30 feet and replacing the existing intake tower and spillway. The water supply storage to be provided will be 70,000 acre-feet (23 billion gallons). Funds of $4.2 million are supported in FY'89.

PROMPTON LAKE, PENNSYLVANIA (MODIFICATION) (PED)

The dam is located on the Lackawaxen River in Wayne County, approximately 31 miles upstream from the confluence of the Lackawaxen and Delaware Rivers.

The proposed plan calls for modifying existing single purpose (flood control) projects by adding water supply and recreation. Storage for flood control will be unchanged by the modification which includes: construction of new control tower to control releases, modification of dam to control underseepage, widen existing spillways, and other features to include land acquisitions, relocations, etc. This water supply project is part of New Jersey's "good faith" agreement with the other Delaware River Basin states. Funds of $1 million are requested.

SECTION 22, NEW JERSEY (PLANNING ASSISTANCE)

This project was established to provide funding for the coordination of studies with other agencies. Funds requested are to be utilized by the Corps of Engineers to perform engineering evaluations of water supply, flood control, erosion and navigation problems within the state of New Jersey.

This planning program has provided meaningful levels of funding for which New Jersey is most appreciative. However, there are several planning projects for which we wish to request funds in FY'89 through this program. The total funds requested for the projects proposed are $300,000.

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On behalf of the Maritime Advisory Council, the civic, trade, port, labor and governmental organizations listed on the cover sheet of this statement which we represent and myself, let me thank you for the courtesy of presenting our recommendations to your sub-committee.

MARITIME ADVISORY COUNCIL OF NEW JERSEY

New Jersey Department of Commerce & Economic Development

CN 823, Trenton, New Jersey 08625
609-292-0700

April, 1988

Dear Members of the United States Congress:

From its earliest origins, New Jersey has been a state heavily dependent on maritime commerce and activity. Annually, our waterways handle more than a quarter billion tons of cargo, yielding more than a billion dollars in customs revenue.

Our many inland waterways and rivers are also important for our commerce and recreation. Unfortunately, one of the results of our growth is that flooding in our state has become an increasing problem.

Development of new water supply for New Jersey and the Delaware River Basin Region is also an issue important to our future.

These are just some of the key questions to be addressed through New Jersey's Civil Works Appropriations for Fiscal Year 1989. The Maritime Advisory Council of New Jersey, in supporting these important projects, has also given careful thought and review to other vital efforts in the areas of navigation, flood control and water supply and Section 22 planning. We ask that you give careful consideration to our requests for additional funding in the FY'89 budget.

Under the auspices of the Water Resources Development Act of 1986, New Jersey is moving ahead with its new responsibilities and planning partnership with the federal government. This summary of important New Jersey civil works projects is aimed at giving members of both the House and Senate Appropriations Committees a greater understanding of our state's unique needs.

We look forward to working with you in the development of New Jersey's budget requests.

Sincerely,

JOHN L. BUZZI

John L. Buzzi, Ph.D., P.E.
Chairman
Maritime Advisory Council
of New Jersey

NAVIGATION

ARTHUR KILL CHANNEL EXTENSION TO CARTERET
NEW JERSEY AND NEW YORK
(STUDY)

FY'89 Budget Request	$ 175,000
Local Interest recommendation	$ 600,000

Project Description

This study will focus on the portion of the Arthur Kill from Howland Hook, New York, south to Carteret, New Jersey. The 35-foot deep existing federal project does not allow the full loading of liquid and dry bulk cargo ships destined for shoreside facilities. This situation requires that large ocean-going vessels either light load (underutilizing ship capacity at a substantial loss of economy), or perform expensive off-shore lightering operations in deeper waters outside this channel. Deeper channels would streamline operations and realize considerable transportation cost savings.

Six deep-draft bulk facilities along the Arthur Kill extension annually handle in excess of 10 million tons of cargo. Petroleum, petrochemicals, specialty chemicals, sulphur and cement are carried to these terminals. Large, modern vessels would immediately benefit from substantial savings and safer navigation if the existing channel were deeper.

Local Interest Recommendation

Although we were pleased to see this project included in the FY'89 budget, it was our belief that the project would be designated a "post authorization, non-cost shared, General Design Memorandum" effort and not a "cost-shared feasibility study." While we support this project, this approach appears to counter the congressional intent of the Water Resources Development Act of 1986, which directly authorizes this project for construction.

A comparison of this shorter and narrower project with the preceding Howland Hook construction increment leaves no doubt that this project is justified. The already heavily industrialized Arthur Kill Extension handles more tonnage than the preceeding reach. Therefore, it is obvious that the Arthur Kill Extension benefit-to-cost ratio must be at least equal to or greater than the 4 to 1 ratio of the preceding reach.

We wish to request that the proposed FY'89 budget amount of $175,000 be increased to $600,000 to help insure the timely completion of all studies for this project at full federal expense. This would advance what we perceive the intent of the Congress to be; namely, a heightened and straightforward effort towards early construction.

BARNEGAT INLET, NEW JERSEY
(CONSTRUCTION)

FY'89 Budget Request	$ 7,800,000
Local Interest Recommendation	$ 7,800,000

Project Description

Channel shoaling, wave activity and numerous marine hazards have created dangerous navigational problems at the Barnegat Inlet, which is located on the Atlantic Coast of New Jersey in Ocean County. These are serious shortcomings that impose limitations on the effectiveness of safe access through an inlet with over 800,000 annual transits.

Since completion of the existing federal project in 1940, approximately $8 million has been appropriated in an attempt to stabilize conditions. This has resulted in only short-term maintenance improvements. New construction is necessary to modify the existing federal navigation project. It will also initiate construction of a realigned south jetty and a wider and deeper navigation channel.

Presently, the only approach to the inlet is from the north along the area of Island Beach. Due to shoaling, breakers occur across the entire outer bar, exposing all vessels to possible impact by severe waves as they enter the inlet entrance. Vessels are also in constant jeopardy of being capsized or pushed across the north jetty because of the current navigating conditions.

Local Interest Recommendation

The modification and construction of a new jetty and improved navigation channel is necessary to correct channel shoaling, wave activity and dangerous hazards which have been responsible for the loss of 11 lives at the inlet over the last five-year period.

This improvement plan will reduce navigation hazards and provide all mariners with safe access through the inlet. As designed, the project will reduce shoaling and maintenance dredging costs over the long term. This project represents a sound, cost-effective investment for safer marine navigation in the area.

We support the Fiscal Year 1989 Budget Request of $7,800,000 to continue the construction work of this improvement plan. The State of New Jersey has in escrow the necessary funds to cost-share this anticipated appropriation.

CAPE MAY INLET TO LOWER TOWNSHIP, NEW JERSEY
(CONSTRUCTION)

FY'89 Budget Request	$ 1,000,000
Local Interest Recommendation	$ 1,000,000

Project Description

The Cape May Inlet project was authorized for construction by the Water Resources Development Act of 1986. The recommended project consists of a beachwater weir at Cape May Inlet with construction of two new groins, beach fill, and maintenance of the two new and seven existing groins. Beach nourishment material would be obtained periodically from a deposition basin located on the northeast side of the inlet and a shoreline monitoring program for Lower Township.

The project is important to the shoreline, both in and below Cape May. Cape May has suffered severe erosion since the construction of the Cape May Inlet jetties in 1911. This has been to the detriment of the recreation industry, boating and fishing and is responsible for repetitive storm-related damages.

Local Interest Recommendation

The Corps of Engineers completed the Phase II Advance Engineering & Design studies for this project in July, 1983 and recommended a project to restore the damage caused to the Cape May navigation jetties. They recommended that this work be done and we support the FY'89 budget recommendation of $1,000,000 which will be cost-shared with available state funds and advance this new construction start.

DELAWARE RIVER COMPREHENSIVE NAVIGATION STUDY
NEW JERSEY, PENNSYLVANIA, AND DELAWARE
(STUDY)

FY'89 Budget Request	$ 316,000
Local Interest Recommendation	$ 316,000

Project Description

The Delaware River Navigation System includes six deep-draft navigation projects serving the Ports of Philadelphia, Pennsylvania; Camden, New Jersey; Trenton, New Jersey and Wilmington, Delaware. These ports collectively transport more than 114 million tons of cargo annually, support nearly 100,000 jobs and provide a much needed economic stimulus to the entire region. This system also serves naval vessels at the Philadelphia Naval Base.

The representatives of port facilities utilizing the Delaware River cite the need for deeper channels and improved navigation facilities to fully accommodate current and future vessel movements. An average of nine million tons of cargo are lightered into barges due to the restrictive 40-foot channel depths.

Local Interest Recommendation

We wish to support the Budget Recommendation of $316,000 to continue the Delaware River Comprehensive Navigation Study and advance the studies to deepen both the Maurice River and Salem River in New Jersey, as well as to investigate other improvements throughout the entire study area.

DELAWARE RIVER, VICINITY OF CAMDEN, NJ
(BECKETT STREET TERMINAL)
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'89 Budget Request	$ 30,000
Local Interest Recommendation	$ 30,000

Project Description

The Beckett Street Terminal is located in Camden, New Jersey on the east bank of the Delaware River, opposite the City of Philadelphia. The Beckett Street Terminal's authorized depth ranges from 18 to 37 feet. At present, there is inadequate depth to allow safe transit of the deep-draft vessels that ship dry bulk cargo to the Beckett Street Terminal. As a result of these inadequate depths, costly alternatives such as lightering and light loading are utilized. There is also dependence on high tides as well to handle the shipping load. With dry bulk and general cargo fleet vessels ever increasing in size, this problem is expected to worsen.

After the situation was studied, the Corps' recommended improvement allows for deepening the channel from 37 to 40 feet in order to permit efficient transit of deep-draft vessels. The plan of improvement includes dredging a trapezoidal approach channel to a depth of 40 feet, with a width of 1,100 feet and lengths of 4,400 and 1,450 feet along the Camden waterfront. Funds allocated would initiate preconstruction engineering and design which would include hydrographic surveys, economic, environmental, and social impact studies and the initiation of detailed design calculation.

Local Interest Recommendation

Annually, 1.1 million tons of bulk cargo, including coal, scrap, metal, lumber gypsum, iron ore and titanium slag are handled at the Beckett Street Terminal, a facility of the South Jersey Port Corporation.

The investment in this area is particularly important as the City of Camden, one of the most economically depressed urban areas of our country, could receive an additional economic boost through millions of dollars in related revenues and hundreds of full-time jobs.

We wish to express our support for the Fiscal Year 1989 Budget Request of $30,000 to complete the General Design Memorandum portion of the preconstruction engineering and design phase of this project and are pleased that it is scheduled for completion in March, 1990.

GREAT EGG HARBOR & PECK BEACH, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY'89 Budget Request	$ -0-
Local Interest Recommendation	$ 50,000

Project Description

This multiple purpose navigation and shoreline erosion control project provides for the modification of the existing beach erosion project at Ocean City, New Jersey. It will provide for jetties, a deposition basin, a bulkhead, backfill and revetments, and an inlet navigation channel 300 feet wide by 12 feet deep below mean low water (MLW).

Also part of the project is a 100-foot wide by six feet deep approach to the New Jersey Intracoastal Waterway, placement of beachfill, inclusion of 11 existing groins, periodic nourishment of the beaches and work for jetty and bulkhead fishing.

Local Interest Recommendation

In 1982 and 1983, the State of New Jersey indicated renewed interest in a scaled down version of this project, based upon the findings of the New Jersey Shore Protection Master Plan. A new source of funds also resulted from a bond issue referendum passed by New Jersey voters in 1983. In 1986, New Jersey reiterated its intent to provide the necessary items of local cooperation.

In September, 1987 the Corps of Engineers completed a reevaluation study for this project and recommended a reduced scope project consisting of dredging beachfill and periodic nourishment.

We, therefore, wish to request that this project be appropriated in the amount of $50,000 for FY'89 so that the preconstuction planning and engineering phase of this project can be completed.

KILL VAN KULL AND NEWARK BAY CHANNEL,
NEW YORK AND NEW JERSEY
(CONSTRUCTION)

FY '89 Budget Request	$ 54,300,000
Local Interest Recommendation	$ 54,300,000

Project Description

This navigation project as authorized will deepen the existing 35-foot channels in the Kill Van Kull and Newark Bay to 45 feet below mean low water (MLW). The project serves Port Newark and Port Elizabeth marine terminals with several widenings and a turning basin. The work covers Staten Island, New York; and Jersey City, Bayonne, Elizabeth, and Newark, New Jersey.

The Port Authority of New York and New Jersey, the local cooperating agency for this project, wishes to take construction in stages, with the first phase going to 40 feet. This project will immeasurably benefit Port Newark and Port Elizabeth, which together comprise the nation's largest container port.

The present 35-foot channels in the Kill Van Kull and Newark Bay preclude modern ocean voyage container ships from fully loading. Substantially increased shipping costs, if allowed to continue, will discourage fleets with larger draft vessels from utilizing these facilities.

Local Interest Recommendation

We are pleased with the progress of construction that has been achieved in both the past and current fiscal year and are grateful for the infusion of adequate federal funds to date that will ready this 40 foot deep project for completion in FY'89. In order to keep this 7.4 to 1 benefit-to-cost ratio project on schedule, we ask the Congress to maintain its high level of interest in this project by appropriating the budgeted sum of $54,300,000 for its Phase 1 completion to 40 feet (MLW).

NEW JERSEY INTRACOASTAL WATERWAY, NEW JERSEY
(STUDY)

FY '89 Budget Request	$ 125,000
Local Interest Recommendation	$ 125,000

Project Description

Presently, the New Jersey Intracoastal Waterway is maintained at a depth of six feet. This depth was determined by the State of New Jersey prior to the Federal project authorization in 1945. New Jersey's portion of the channel, which extends 117 miles along the coast of New Jersey from Manasquan Inlet to the Delaware Bay, is easily the most restrictive link in this inland waterway between New England and Florida.

The Federal project has authorized a 12-foot depth and 1,100 feet width from the Atlantic Ocean through Manasquan Inlet and River, the Point Pleasant Canal, the Intracoastal Waterway, and Cape May Harbor to Delaware Bay Canal. Included at the request of local interests is the extension of the project from Manasquan to the Shrewsbury River in Monmouth County.

Although authorized, the project remains unconstructed due to unresolved problems of difficult wetlands and low bridge clearance, primarily in the Atlantic City and Longport, New Jersey areas.

This channel handles 230,000 tons of freight, and 1,100,000 passages annually through numerous inlets and an expanding commercial fleet is experiencing increasing difficulties navigating its inadequate depth and widths.

Local Interest Recommendation

We wish to support the budget request of $125,000 for Fiscal Year 1989, which will be used for a study to assess the feasibility of specific design alternatives for this project, and for which the State of New Jersey is willing to provide the requisite cost-share.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT,
NEW YORK AND NEW JERSEY
(CONSTRUCTION)

FY '89 Budget Request	$ 1,409,000
Local Interest Recommendation	$ 5,000,000

Project Description

This project calls for the collection and removal of more than 29 million cubic feet of drift from derelict vessels and non-repairable piers and waterfront structures. It covers all of the Port of New York and New Jersey, including shores and tidal tributaries of Sandy Hook, Raritan Bay, Authur Kill, Kill Van Kull, Lower New York Bay, Passaic River, Hackensack River, Upper New York Bay, Lower Hudson River, Harlem River, East River, Jamaica Bay and the Western Port of Long Island Sound. The project encompasses seven New Jersey and seven New York counties. Four hundred and sixty miles of shoreline in New York and 295 miles of shoreline in New Jersey will be affected.

Various types of drift have caused damage to an estimated 17,800 vessels and boats annually. Propellers, shafts and hulls are the most often damaged vessel components. Repair costs and economic losses due to drift exceeded $48 million in 1986. Drift cluttering our shores also creates a menace to swimmers and promotes the spread of marine borer infestation.

Local Interest Recommendation

Major progress in waterfront clean-up has been made as a result of this project which enjoys widespread bi-state and community participation. The budgeted sum of $1,409,000 does not represent the true annual capability of this project. To the contrary, it portrays a grim picture of a popular project that will come to a halt because its federally authorized funding ceiling will be reached in FY'89.

Our request for this project is that either legislation be enacted to increase the total spending cap to $55,000,000 or that an annual spending cap (not to exceed $6,000,000) be authorized for the remaining life of this ongoing improvement.

In the hope that renewed funding becomes available, we request that $5,000,000 be appropriated in FY'89 to permit the Corps to resurrect program work that is presently threatened with indefinite deferral. Specifically, this larger sum would be used to complete construction along the Weehawken to Edgewater, Jersey City and Bayonne waterfronts in New Jersey and portions of the Brooklyn waterfront in Upper New York Bay.

PORT JERSEY CHANNEL, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY '89 Budget Request	$ 500,000
Local Interest Recommendation	$ 500,000

Project Description

This project will deepen a 35-foot access channel (non-federal) to a 41-foot channel (federal) providing safe and economical use of this waterway at all stages of tide. The Port Jersey Access Channel presently serves the Global Marine Container Terminal, which in turn serves 13 shipping lines. In 1987, this facility handled 320 vessel arrivals with 214,172 container units (each unit measures 20 feet). Of the arriving vessels, 75% had design drafts too deep for the channel with a third actually loaded to drafts necessitating delays awaiting high tide. Over four hundred terminal employees with an annual payroll of $16 million, as well as another 107 contract workers, depend upon this facility for their livelihood. As a privately-owned terminal, Global also pays in excess of $1.1 million in local real estate taxes annually.

Also served by this channel is the U.S. Army Military Ocean Terminal facility and a parcel of land upon which the owner and local cooperating agency, the Port Authority of New York & New Jersey, has announced plans to develop a marine terminal.

Local Interest Recommendation

The future of this facility is critically dependent upon a channel of at least 40 feet deep so that it may remain competitive with other container terminals served by waterways of this and greater depths.

As this improvement has received a favorable report by the Secretary of the Army and the Chief of Engineers, we wish to continue our support for the budget request of $500,000 for this project in Fiscal Year 1989 to continue the preconstruction engineering and design effort which is scheduled for completion in June 1991. This appropriation is considered as adequate and should not be reduced.

TOWNSEND INLET AND SEVEN-MILE BEACH, NEW JERSEY
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY '89 Budget Request	$ -0-
Local Interest Recommendation	$ 200,000

Project Description

The existing project provides for modification of beach erosion control at Stone Harbor, New Jersey, providing for jetties, a deposition basin, an inlet channel 300 feet wide by 12 feet deep to the New Jersey Intracoastal Waterway, two groins and beach flood control fill at Avalon. Also included in this scope are periodic nourishment of beaches and six existing groins, construction of five additional groins as needed and appurtenant work for jetty fishing.

Local Interest Recommendation

No work has been accomplished for the existing project. Local interests have already constructed two groins and the south jetty at Townsend Inlet. We wish to recommend for consideration that $200,000 be appropriated in FY'89 to initiate the preconstruction engineering and design phase of this project, which was reauthorized with provisions for construction of separable elements under Section 831 (3) of the Water Resources Development Act of 1986.

FLOOD CONTROL

ABSECON ISLAND, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ --0--
Local Interest Recommendation	$ 250,000

Project Description

The plan for Absecon Island, which was authorized for construction in Section 605 of the Water Resources Development Act of 1986 in accordance with the provisions for construction of all seperate elements, would include all the features for the Absecon Inlet frontage of Atlantic City which are partially constructed. Also included are the oceanfront beaches of Absecon Island, and a breakwater constructed just north of the Brigantine Jetty. Periodic nourishment of barrier beaches will also take place with the material obtained from a deposition basin at the breakwater.

The purpose of this phase would be to determine whether the existing projects located on Absecon Island should be modified to provide a comprehensive plan that reduces the rate of beach erosion and provides partial protection from storm and flood damage.

Local Interest Recommendation

The long-term instability and recession of the beaches along Absecon Island due to erosion is a significant problem. In March 1962, a severe northeast storm caused extensive damage to beaches, bulkheads and private property. The storm caused damages of approximately $22,000,000 to Absecon Island communities.

More recently, the storm of March 1984 also caused damage on Absecon Island. The presidential declaration of New Jersey as a Federal Disaster Area included Absecon Island. In September 1985, Hurricane "Gloria" alone resulted in $6.6 million in damages and Absecon Island was once again included in the presidential declaration of a Federal Disaster Area.

In view of the above, we wish the recommend that $250,000 be provided in Fiscal Year 1989 to begin preconstruction engineering and design work for this flood control project, which our state is prepared to fund.

BEATTIE'S DAM, PASSAIC RIVER, NEW JERSEY
(STUDY)

FY'89 Budget Request	$ 300,000
Local Interest Recommendation	$ 300,000

Project Description

The study area is located on the Passaic River upstream of Beatties Dam in the Townships of Little Falls, Totowa, Wayne (Passaic Co.) and Fairfield (Essex Co.), New Jersey. This study will determine the feasibility of providing local flood control protection measures and/or modifications to the existing non-federal dam. Major flood damage areas exist in the above municipalities. The most severe recent flood occurred in April 1984, resulting in damages estimated at nearly $70 million. Other floods occurred in 1968, 1971, 1973 and 1975. The average damages from flooding to residential and commercial properties is in excess of $10,000,000 annually.

This project was authorized by the Water Resources Development Act of 1986. Although not stated in the Act, the project desired by local interests consists of modification of Beattie's Dam and upstream channel work. The project was authorized without a Corps of Engineers report.

Local Interest Recommendation

In FY'88, funds were allocated to initiate and complete a reconnaissance study to determine the need for detailed studies, obtain local cost-sharing and develop a plan for the feasibility phase of the study.

The feasibility study phase of the project would investigate any alternatives available and the modification to Beattie's Dam in conjunction with the upstream snagging, clearing and channel rectifcation of the Passaic, Pompton, Pequannock, and Ramapo Rivers and tributaries, including Singac Brook and Weasel Brook.

Local interests have requested that Beattie's Dam be modified in order to lower upstream flood stages and reduce flood damages. We wish to express our support for the FY'89 budget request of $300,000 to be used to initiate the feasibility phase study of this project which if kept on schedule will be concluded in March of 1991.

COAST OF NEW JERSEY EROSION AND STORM EFFECTS STUDY
(STUDY)

FY'89 Budget Request	$ ---0---
Local Interest Recommendation	$ 1,000,000

Project Description

This study consists of the coastal area of New Jersey from Sandy Hook to Cape May Point. This coastal area is broadly defined to include inland areas impacted by stream flow and runoff, and coastal waters beyond the limit of deepwater disposal sites. It also includes adjacent coastal areas to the north and south which may contribute pollutants or forcing functions to the main study area.

Pollution events along the coast included algae blooms, dolphin kills, high bacteria levels and garbage slicks. These events contributed to business losses estimated at $350 million to $1.4 billion during the summer of 1987.

Severe erosion has occurred along the study area, causing considerable economic loss. Erosion of the shoreline results from the action of storm tides, tidal currents, wind waves and swells. Substantial quantities of sand are being continuously lost, thereby narrowing and lowering the beaches. Public and private properties are subject to storm damage from wave attack and tidal inundation.

Local Interest Recommendation

Overall the problems represent a serious deficiency in the quantity and character of coastal information that is available to predict or monitor coastal water quality and erosion. A comprehensive data collection effort is required in order to better understand coastal processes, as well as to improve the engineering base of Corps of Engineers projects.

The Corps of Engineers was recently authorized to undertake a large comprehensive study of coastal resources along the entire coast of New Jersey. This study was prompted by numerous coastal problems during the 1987 summer tourist season. Included in this study will be the development of a physical, environmental, and engineering data base on coastal area changes and processes.

We wish to request that $1 million be provided to initiate this Reconnaissance Phase study to develop recommendations for the prevention of further water quality degradation and pollution of New Jersey coastal waters. This study is strongly supported by the State of New Jersey.

DELAWARE BAY COASTLINE, NEW JERSEY AND DELAWARE
(STUDY)

FY '89 Budget Request	$ ---0---
Local Interest Recommendation	$ 500,000

Project Description

The study area is bordered by southern New Jersey to the east and the state of Delaware to the west. The upper limit of the study area is the Chesapeake and Delaware Canal and the Salem River with the lower limit being Cape Henlopen and Cape May Point. This portion of the estuary is approximately 60 miles in length. Located on the New Jersey shoreline are the communities of Elsinboro, Sea Breeze, Gandy's Beach, Fortescue, Reed's Beach, and Pierce's Point.

Combinations of high tides, river currents, and wind generated waves are the major forces acting to cause erosion of the shoreline and flooding in the study area. Major damages are experienced during hurricanes and "Nor easter" storms (generally occurring from September to March.)

Local Interest Recommendation

The goals of the study are to provide information on the long-term shoreline changes which will serve as a basis for sound coastal planning decisions.

Since the data is urgently needed in order to deal with the beach erosion/flooding problems in the Delaware Bay area and to implement remedial measures, we wish to request an appropriation of $500,000 in Fiscal Year 1989 for this study. The study is authorized by the Water Resources Development Act of 1986.

Both the State of New Jersey and the State of Delaware are supportive of the study and have expressed a willingness to consider cost-sharing for the feasibility phase.

HACKENSACK RIVER BASIN, NEW JERSEY AND NEW YORK
(STUDY)

FY '89 Budget Request	$ 400,000
Local Interest Recommendation	$ 400,000

Project Description

This study will determine the need for flood control improvements in the Hackensack River Basin, including the Meadowlands region. The Hackensack River and its tributaries are located primarily in Bergen and Hudson Counties, New Jersey and in Rockland County, New York. All three counties were declared disaster areas in 1971 and 1975. Additionally, Rockland County was declared a disaster area in 1972. It is estimated that over $440,000,000 in damage would result from a 100-year tidal flood.

Local Interest Recommendation

The $400,000 for a study of Hackensack River Basin flood control feasibility is one item which we support. However, we would like to point out that New Jersey views this particular survey as an ongoing priority, having been initiated prior to the passage of the Water Resources Development Act of 1986. This project should not require cost-sharing for the feasibility study and should be funded again in Fiscal Year 1989 to continue the feasibility study.

LIBERTY STATE PARK LEVEE AND SEAWALL, NEW JERSEY
(CONSTRUCTION)

FY '89 Budget Request	$ 4,778,000
Local Interest Recommendation	$ 4,778,000

Project Description

The construction of this levee project will allow the creation of a large "green park" to include a wetlands preserve, an inland water course and boat basin, a marina, an amphitheater, indoor and outdoor recreation facilities, picnic areas, historic areas, community facilities, and other open space areas for visitors. The stone armored levee will provide a flood control measure for that area of Jersey City and is also designed for subsequent construction of an attractive tree-lined promenade curving along the water's edge.

Local Interest Recommendation

We wish to express support for the FY'89 budget recommendation of $4,778,000 to continue construction of the Liberty State Park levee and sea wall. The state park area is directly opposite the Statue of Liberty and Ellis Island. It is in an area that is viewed as a national cultural resource, and as such is the most heavily visited park in New Jersey. Budgeting of the requested funds (which the state of New Jersey is prepared to match), will allow for the expeditious completion of this highly visible project during FY '89.

LOWER SADDLE RIVER, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 750,000
Local Interest Recommendation	$ 750,000

Project Description

Major flooding of the Saddle River in recent years has plagued the communities of Garfield, Wallington, South Hackensack, Lodi, Saddle Brook, Rochelle Park and Fair Lawn, New Jersey. The Lower Saddle River study area, located in Bergen County, affects over 2,500 recreational, commercial, and industrial establishments.

In an effort to provide protection against flooding in these communities, the proposed improvements for the Lower Saddle River consists of 5.2 miles of channel modification along the Saddle

River, 1.7 miles of channel modification along Sprout Brook, the straightening of a meander near the mouth of the Saddle River and modifications to 22 bridges on both streams. These project improvements would provide protection against a 150-year flood event to the affected area. The recommendations for flood control of Saddle River would eliminate over $6,000,000 of flood damage to the area annually.

This preconstruction engineering and design effort was authorized by the Water Resources Development Act of 1986. Local interest cost sharing requirements will be provided for land easements, rights-of-way and relocations.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1989 Budget Request of $750,000, which will be used to continue the preconstruction engineering and design phase. Included in the PE&D is the completion of topographic data collection and mapping, initiating collection of subsurface data, initiating preparation of a cultural resources survey report, initiating a hydraulic design, and project coordination. The preconstruction engineering and design effort is scheduled for completion in September 1993.

MOLLY ANN'S BROOK, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY'89 Budget Request	$ 250,000
Local Interest Recommendation	$ 250,000

Project Description

The study area, which is approximately 12 miles west-northwest of New York City, is located in Haledon, Prospect Park and Paterson, New Jersey. It includes Molly Ann's Brook from Union Avenue in Paterson upstream for 2.2 miles to Church Street in Haledon. Major flooding in recent years has adversely affected about 520 residential, commercial and industrial establishments in the 100-year flood plain.

The plan of improvement recommends a modified channel with a total length of 14,730 feet which combines earthen and riprap lined trapezoidal channels with concrete flumes and a drop structure.

The proposed plan would provide general protection against a 50-year flood event throughout the planning area. The average annual equivalent damages which would result without the project are estimated at over $2,000,000.

Local Interest Recommendation

The Molly Ann's Brook at Haledon, Prospect Park and Paterson, New Jersey flood control project is authorized for construction by the Water Resources Development Act of 1986. Local interests have expressed a willingness to act as the non-federal cooperating agent for this flood control project.

We wish to support the FY'89 budget request of $250,000 which will be used to initiate the preconstruction engineering and design phase of this project. Included in this phase will be the development of a plan of study, schedule and cost estimates, initiation of topographic data collection as well as technical studies. This preconstruction engineering and design effort is scheduled for completion in June 1994.

PASSAIC RIVER EAST BANK STABILIZATION, NEW JERSEY (STUDY)

FY'89 Budget Request	$ 200,000
Local Interest Recommendation	$ 200,000

Project Description

This study area extends about nine miles along the Passaic River from its mouth at Kearny to Dundee Dam in Garfield, New Jersey. The study will determine the feasibility of streambank erosion protection, to include flood protection measures and recreational facilities. The study will be conducted in coordination with the Passaic River Restoration Steering Committee.

As part of the study, an East Bank stabilization project was authorized in Section 603 of the Water Resources Development Act of 1986. Consultation with the Passaic River Restoration Committee was mandated and the project was authorized without a Corps of Engineers Report. The FY'89 budget allocation is being used to fully fund the reconnaissance phase.

Local Interest Recommendation

The proposed plan would stabilize the erosion of the east bank of the lower Passaic River, control over bank flooding and enhance and create recreational opportunities in a highly urbanized area. These communities have a documented shortage of recreational facilities. Depending upon timing of implementation, this project may be part of the recommended plan for Passaic River Main Stem flood damage reduction.

We wish to support the FY'89 budget request of $200,000, which will be used to initiate the feasibility phase of this study. The State also requests that this study be integrated into the Passaic River Main Stem project and implemented concurrently.

PASSAIC RIVER MAIN STEM, NEW JERSEY AND NEW YORK
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 750,000
Local Interest Recommendation	$ 750,000

Project Description

The Passaic River Basin encompasses 935 square miles in northern New Jersey and southeastern New York State. The Basin is drained by the Passaic River and its seven major tributaries: Saddle River, Pompton River, Ramapo River, Pequannock River, Wanaque River, Rockaway River and Whippany River. The flood plain area comprises more than 80 square miles and encompasses 45 municipalities.

The plan has been developed to protect over 30,000 structures in the critical flood problem area. The most severe recent flood occurred in April 1984, claiming two lives, with damages estimated at $360,000,000. The entire Basin, or portions thereof, was declared a disaster area in 1968, 1971, 1973, twice in 1975 and in 1984. The recurrence of the October 1903 flood of record would cause damages of nearly $2 billion.

The major elements of this flood control proposal are the two tunnels, with the key being the 13.5-mile long, 39-foot diameter main tunnel, which will carry floodwaters from an inlet at the upper end of the Pompton River down to an outlet on the west bank of the Passaic River, just upstream of its confluence with the Third River in Clifton. The diversion tunnels and associated surface work are designed to protect against a 100-year flood event.

Local Interest Recommendation

This is a major project for the entire Passaic River Basin and as such the Passaic River Main Stem Flood Protection Feasibility Report has recommended the preparation of preconstruction engineering and design studies for this flood control plan.

We wish to support the FY'89 budget request of $750,000 which will be used to continue the preconstruction engineering and design phase, including continued work on the design effort cost estimates, schedule and work management plan, and coordination. This preconstruction engineering and design effort is scheduled for completion in September 1995 and has the continued support of the State of New Jersey.

PINE BROOK, MANALAPAN TWP., NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 75,000
Local Interest Recommendation	$ 75,000

Project Description

This planning and engineering effort addresses the need for flood control improvements along Pine Brook in the township of Manalapan, New Jersey. The Pine Brook Basin, located in east Central New Jersey, drains on area of 5.2 square miles and flows for a distance of 5.3 miles.

The planning and Engineering study was authorized by the Water Resources Development Act of 1986, Section 401 (c). The authorized plan as developed entails channel modifications, clearing and snagging. The channel modification consists of widening and deepening of approximately 6,000 linear feet of Pine Brook. The clearing and snagging would be accomplished for a distance of 700 feet above and 1,000 feet below the channel limits.

Local Interest Recommendation

Fiscal Year 1988 funding was used to initiate the planning and engineering portion of the study. The authorized plan and alternatives include development of benefits and costs, and the extent of environmental impacts. The budget request for Fiscal Year 1989 will be used to complete the preconstruction engineering and design study.

Therefore, we wish to support this budget recommendation of $75,000 to provide the funding to complete the FE&D portion of this project for which the State of New Jersey has expressed its support.

POPLAR BROOK, NEW JERSEY
(STUDY)

FY '89 Budget Request	$ 50,000
Local Interest Recommendation	$ 50,000

Project Description

This study will determine the need for flood control projects along Poplar Brook, New Jersey. Poplar Brook has a drainage area of four square miles and originates at the western boundary of Ocean Township and flows eastward through the Borough of Deal into the Atlantic Ocean. The areas subject to flooding are low-lying grounds along Poplar Brook and the area along the Brook from below Norwood Avenue to Ocean Avenue in the Borough of Deal. Damages to residential properties over the past several years have amounted to over $750,000.

This flood control project was authorized in Section 401 (e) of the Water Resources Development Act of 1986 and includes: the reconstruction of the Brook through the Borough of Deal, to accommodate the runoff from a storm having an average frequency of occurrence of once every 15-years, replacement of the culvert through the Conrail railroad embankment with a new culvert

designed to pass a 15 year flood event, and additional upstream improvements. This locally preferred project and alternative flood control measures will be evaluated during the reconnaissance phase of the study.

Local Interest Recommendation

Fiscal Year 1988 budget funds are being used to initiate the reconnaissance study and thereby determine the need for more detailed studies, to obtain local cost-sharing agreements, and to develope a plan of study for the feasibility phase.

We wish to support the FY'89 budget request of $50,000 which will be used to initiate the next phase of the project, the feasibility study.

RAMAPO AND MAHWAH RIVERS,
MAHWAH, NEW JERSEY AND SUFFERN, NEW YORK
(CONSTRUCTION)

FY'89 Budget Request	$ 300,000
Local Interest Recommendation	$ 300,000

Project Description

The Ramapo and Mahwah Rivers in the Township of Mahwah, New Jersey, have been adversely affected by storm flooding. Over 220 structures, primarily residential and several commercial and industrial establishments, have been damaged in recent years.

The Mahwah/Suffern area has experienced chronic flooding with recent floods in 1968, 1971, 1973, 1977, 1979, 1980, 1983 and 1984. The most damaging flood of record was the November 1977 storm. A recurrence of this storm, which has a return interval of approximately 40 years, would cause an estimated $4.5 million in damages. The plan as proposed would provide protection against a 100-year flood event in the major damage area.

In order to control flood damage for the Mahwah/Suffern area, the recommended plan includes channel modification along approximately 7,000 feet of the Ramapo River and approximately 5,000 feet of the Mahwah River, and construction of a new bridge. Improvements would provide protection against a 100 year flood event to the major flood damaged areas. The flood control recommendations would eliminate just under a million dollars of urban flood damage to the area annually.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1989 Budget Request of $300,000 which will be used to begin the construction phase of the project. The State of New York and the State of New Jersey have each indicated their intent to comply with the items of local cooperation.

RAMAPO RIVER AT OAKLAND, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 470,000
Local Interest Recommendation	$ 470,000

Project Description

The Ramapo River, particularly in the Townships of Oakland, Wayne and Pompton Lakes, New Jersey has experienced chronic flooding, with recent floods occurring in ten out of the last sixteen years. Surrounded by an area saturated with development, 300 residences, along with recreational facilities and several commercial and industrial establishments, have been adversely affected by major flood damage.

The recommended plan of improvement for the study area includes installation of 5-foot spillway crest gates atop Pompton Lakes Dam and 6,800 feet of channel modification along the Ramapo River, both designed to reduce flood elevations. These improvements would provide protection against a 40-year flood event to over 300 structures throughout the planning area. These improvements for flood control would eliminate over three quarters of a million dollars of flood damage per year.

This project has been authorized for construction by the Water Resources Development Act of 1986. The State of New Jersey has indicated its willingness to act as the non-federal cooperating agent for this project and provide for land easements, rights-of-way and relocations as are necessary for the project.

Local Interest Recommendation

We wish to express support for the Fiscal Year 1989 Budget Request of $470,000, which will be used to continue the preconstruction engineering and design, include the completion of topographic data collection and mapping, initiate collection and subsurface data, preparation of a cultural resources survey report, hydraulic design and project coordination. This preconstruction engineering and design effort is scheduled for completion in September 1992.

RARITAN RIVER BASIN, GREEN BROOK SUB-BASIN, NEW JERSEY
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 1,500,000
Local Interest Recommendation	$ 1,500,000

Project Description

Located within the Raritan River Basin in north central New Jersey (Middlesex, Somerset and Union Counties), the Green Brook Sub-Basin study area drains approximately 65 square miles of urban, suburban and industrialized area.

Major flooding losses include not only physical damage to property but loss of public access to commercial and industrial activity, rail and vehicular traffic. In 1971, Hurricane Doria caused more than $22 million in damage, while another major storm in 1973 contributed to six deaths, residential evacuation and over $25 million in damages. Today, such a storm would cost nearly $65 million.

The recommended plan for flood control consists of approximately 15 miles of levees and floodwalls along the Green Brook and its tributaries; six pumping stations; 12 bridge replacements; and approximately three miles of stream realignment. The proposed plan for flood control would help eliminate the approximately $11 million in flood damage that occurs in the area annually.

Local Interest Recommendation

The Water Resources Development Act of 1986 authorized construction of the project described as Plan A in the report of the District Engineer. This project would include protection for the upper Green Brook Sub-Basin and the Stony Brook Sub-Basin and the Stony Brook tributary, in addition to protection for the Lower Green Brook Sub-Basin.

The State of New Jersey has expressed a preference for the authorized plan, which would also provide protection to the upper basin communities. The Green Brook Flood Control Commission, composed of representatives of the Sub-Basin communities in three counties, also supports this position.

Fiscal Year 1988 funds are being used to continue the PE&D phase of this project, which includes refinement of hydraulic design and the initiation of structural design. In order to move this project to its scheduled completion date of January 1992, we wish to express our support for the FY'89 budget request of $1,500,000 to be used to continue the preconstruction engineering and design studies and preparation of the General Design Memorandum.

SANDY HOOK TO BARNEGAT INLET, NEW JERSEY
(CONSTRUCTION)
(PRECONSTRUCTION ENGINEERING AND DESIGN)

FY '89 Budget Request	$ 1,200,000
Local Interest Recommendation	$ 1,200,000

Project Description

The overall project area lies along the Atlantic Ocean Shoreline of New Jersey in Monmouth and Ocean Counties between Sandy Hook to the North and Barnegat Inlet to the South.

Erosion has seriously reduced the width of most beaches in the study area, with consequent exposure of shore to storm damage. The State of New Jersey and mayors of the affected communities are also very concerned over the increased potential for damages to residential and commercial structures.

The March 1962 storm caused $31,100,000 worth of damages (based in today's dollars) along the 25-mile stretch of shore from Sandy Hook to Manasquan Inlet. Subsequent emergency restoration works in this reach cost over $7 million (again in 1987 dollars).

Improvements to Section I include 12 miles of beach placement, construction of 23 groins and extension of 14 existing groins. Section II also suffers from eroding beaches and calls for beach placement over nine miles.

Local Interest Recommendation

Consistent with the Water Resources Development Act of 1986, the non-federal share of construction and maintenance of the Ocean Township to Sandy Hook reach consists of monies expended by non-federal interests for reconstruction of the seawall at Sea Bright and Monmouth Beach.

The urgency of this project results from even less beachfront being in place today as a result of erosion and storms. Local communities are fearful that the next coastal storm would be catastrophic with increased risk of coastal flooding from storm surges.

We wish to support the FY'89 budget request of $1,200,000 which will be used to complete the engineering and design work needed to award the first construction contract for Section I and to continue the PE&D phase for Section II. That state of New Jersey has stated its willingness to provide the items of local cooperation and has escrowed the necessary state share to demonstrate a committment to this project.

WATER SUPPLY

FRANCIS E. WALTER DAM, PENNSYLVANIA (MODIFICATION)
(CONSTRUCTION)

FY '89 Budget Request	$ 4,200,000
Local Interest Recommendation	$ 4,200,000

Project Description

The Francis E. Walter Dam project is a water supply/flood control project. The existing dam rises to a maximum height of 234 feet above the streambed and extends 300 feet across the valley. The proposed modification involves raising the existing dam by 30 feet for the purpose of providing long term storage for water supply and recreational use, with no reduction in flood control storage. Water supply storage will amount to 23 billion gallons (70,000 acre-feet) to benefit the entire Delaware River Basin. This area experienced its greatest drought of record during the 1960's. In 1981, 1984 and 1985 the Basin also experienced a serious lack of rainfall that prompted the Delaware River Basin Commission (DRBC) to declare a drought emergency.

Local Interest Recommendations

Preconstruction engineering & design for this project started in FY'81 and the General Design Memorandum was compiled in July 1985. The GDM was approved in November 1986 and the plans and specifications for the first construction contract were completed in June 1986.

We wish to support the Fiscal Year 1989 Budget Request of $4,200,000 for construction of this project, which is also part of the Delaware River Basin Commission's Comprehensive Plan. This modification, listed as a Pennsylvania project, will aid four states represented in the Delaware River Basin Compact (Delaware, New Jersey, New York, and Pennsylvania). The increased capacity of this reservoir will contribute to long range water supply storage capability and regional economic stability through drought protection.

PROMPTON LAKE, PENNSYLVANIA (MODIFICATION)
(PRECONSTRUCTION ENGINEERING & DESIGN)

FY '89 Budget Request	$ 1,000,000
Local Interest Recommendation	$ 1,000,000

Project Description

Prompton Lake, a flood control project, is located on the Lackawaxen River, approximately 30 miles from the confluence of the Lackawaxen and Delaware Rivers in northeast Pennsylvania. The present dam extends to a maximum height of 140 feet above the stream bed. At present the facility calls for modifying this single purpose (flood control) project by adding water supply and recreation.

Prompton Reservoir controls the runoff from a drainage area of about 60 square miles and storage capacity for flood control will be unchanged by this project. The modification to Prompton will provide an active long-term storage of approximatley nine billion gallons of new water supply to the Delaware River Basin region. Two recent drought emergencies in the Delaware River Basin give emphasis to the early need for additional supplies of water. This project has been authorized by the Water Resources Development Act of 1986, and is included as part of the Comprehensive Plan of the Delaware River Basin Commission (DRBC).

Local Interest Recommendation

This modification, while listed as a Pennsylvania project, will also aid the States of Delaware, New Jersey and New York who are represented jointly (along with the U.S. Department of the Interior) in the 1961 Delaware River Basin Compact.

We wish to support the Fiscal Year 1989 Budget Request of $1,000,000 to continue work on the general design memorandum to include hydrology, hydraulics, economics, environmental formulation, and design activities. This preconstruction engineering and design effort is scheduled for completion in FY'90.

PLANNING ASSISTANCE

SECTION 22, P.L. 93-251, NEW JERSEY
(PLANNING ASSISTANCE)

FY '89 Budget Request	$ --0--
Local Interest Recommendation	$ 300,000

Project Description

Section 22 of the Water Resources Development Act of 1974 provides authority for the Corps of Engineers to assist the States in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. Assistance is provided on the basis of state requests and eligibility is determined by the objectives of the state studies. Consequently, the state must have a planning program either underway or characterized in sufficient detail so that the validity of its request may be appraised. In addition, only that assistance which can be undertaken by Corps personnel may be provided.

In accordance with P.L. 99-662, state allotments from the nationwide appropriation are limited to $300,000 annually, but may be less, depending upon the needs of individual states. There is no direct cost to a state for work under Section 22. The program can encompass many types of studies, including water supply, water quality, water conservation, hydropower development, flood control, erosion, and navigation. Typical studies are at a reconnaissance level of detail.

Local Interest Recommendation

This project was established to provide planning assistance to states. Funds requested are to be utilized by the Corps of Engineers to perform engineering evaluations of water resource problems within the State of New Jersey.

This planning program has provided meaningful levels of funding for which New Jersey is most appreciative. However, there are several planning projects for which we wish to request funds in FY'89 through this program. The total funds requested for these proposed studies is $300,000.

New Jersey Maritime Advisory Council Affiliate Oganizations

Delaware River Port Authority

International Union of Operating Engineers

New Jersey Alliance for Action

New Jersey Department of Commerce, Energy and Economic Development

New Jersey Department of Environmental Protection

Delaware River Bay and Bridge Authority

Pilots Association for the Bay & River Delaware

Port Authority of New York & New Jersey

South Jersey Port Corporation

PENJERDEL Council

United Sandy Hook Pilots Association

Joint Executive Committee for the Improvement of the Delaware

Maritime Association of the Port of N.Y. and N.J.

Marine Trades Association of N.J.

JOINT STATEMENT OF JAMES J. KIRK, DIRECTOR, PORT DEPARTMENT, THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY; BORDEN R. PUTNAM, COMMISSIONER OF COMMERCE, ENERGY AND ECONOMIC DEVELOPMENT OF NEW JERSEY; AND MICHAEL P. HUERTA, COMMISSIONER OF PORTS, INTERNATIONAL TRADE AND COMMERCE, CITY OF NEW YORK

Endorsed by

Bayonne Chamber of Commerce (NJ)
Board of Pilots Commission, State of New Jersey
Brooklyn Chamber of Commerce (NY)
Chamber of Commerce of the Borough of Queens (NY)
City of Newark, Department of Engineering (NJ)
Commerce and Industry Association of New Jersey
Greater Newark Chamber of Commerce (NJ)
Hudson County Chamber of Commerce and Industry (NJ)
International Longshoreman's Association
Local 333 - United Marine Division
Maritime Association of the Port of New York and New Jersey
Maritime Port Council of Greater New York and Vicinity
New Jersey Alliance for Action
New Jersey Citizens Transportation Council
New Jersey State Chamber of Commerce
New Jersey Maritime Advisory Council
New York Board of Trade
New York Chamber of Commerce and Industry
New York-New Jersey Port Promotion Association
New York Shipping Association, Inc.
Save Our Port
Staten Island Chamber of Commerce (NY)
Towboat and Harbor Carriers Association of New York and New Jersey
Union County Chamber of Commerce (NJ)
Union County Planning Board (NJ)
United New Jersey Sandy Hook Pilots Benevolent Association
United New York Sandy Hook Pilots Benevolent Association

I am James J. Kirk, Director, Port Department of The Port Authority of New York and New Jersey. Joining me are the Honorable Borden R. Putnam, New Jersey State Commissioner of Commerce and Economic Development, and The Honorable Michael P. Huerta, New York City Commissioner of Ports, International Trade and Commerce. Each will address specific projects commensurate with our roles as the agency of local cooperation or according to our special interests. We are also representing the 27 civic, trade, labor and governmental organizations listed on the cover sheet of this statement. We appreciate the opportunity to present our views and recommendations for essential navigation and related projects in the Port of New York and New Jersey.

I will summarize the recommendations for Federal Fiscal Year 1989 appropriations for our Port's navigation projects under the jurisdiction of the U.S. Army Corps of Engineers' Civil Works Program.

	Budget Recommendation	Port Recommendation	Difference
CONSTRUCTION			
Kill Van Kull and Newark Bay Channels, NY & NJ	$54,300,000	$54,300,000	None
New York Harbor Collection and Removal of Drift, NY & NJ	1,409,000	5,000,000	$ 3,591,000
Sheepshead Bay, NY	None	300,000	300,000

STUDY			
New York Harbor and Adjacent Channels (Port Jersey), NJ	500,000	500,000	None
Arthur Kill Channel Extension to Fresh Kills, Staten Island, NJ	175,000	600,000	425,000
New York Harbor and Adjacent Channels (Red Hook Flats Anchorage), NY	None	400,000	400,000
Miscellaneous			
Emergency Response Services	None	2,000,000	2,000,000
TOTALS	$56,384,000	$63,100,000	$ 6,716,000

KILL VAN KULL AND NEWARK BAY CHANNELS, NY & NJ

The Kill Van Kull and Newark Bay Channels, NY & NJ is a harbor deepening project that was authorized for construction in the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88) and The Water Resources Development Act of 1986 (Public Law 99-662). The Port Authority is providing local cooperation and the nearly $51 million required non-Federal cost-sharing for this project.

We are pleased with the progress of construction that has been achieved and are grateful that adequate Federal funds have been budgeted for completion of channel deepening from 35 feet to 40 feet in Fiscal Year 1989. In order to keep the project on schedule, we strongly urge that the budgeted sum of $54,300,000 contained in the proposed Federal budget for Fiscal Year 1989 be retained to assure the continuation and timely completion of this project.

NEW YORK HARBOR COLLECTION AND REMOVAL OF DRIFT PROJECT, NY & NJ

The New York Harbor Collection and Removal of Drift Project, NY & NJ, is aimed at the removal of approximately 2,230 sunken hulks and 149 decaying shore structures that are the sources of dangerous, unsightly and costly harbor drift. The Corps of Engineers has estimated for 1987 that 17,800 commercial, public and recreation vessels collide annually with drift causing damage to propellers, shafts and hulls. In addition, the average annual associated repair costs and other economic losses for 1987 are estimated to exceed $48 million.

Mr. Chairman, as you know, the project has long involved non-Federal cost-sharing in the form of a one-third local contribution for removal work and 100 percent local financial responsibility for required repairs to an estimated 182 shore structures. The Port community has the funding available and is prepared to expand project participation.

The budgeted sum of $1,409,000 does not represent the true annual capability of this project. To the contrary, it portrays a grim picture of a popular project that will come to a grinding halt because its Federally authorized funding ceiling will be reached in Fiscal Year 1989. We have requested an increase in the spending cap through the appropriate committees and legislation now being considered will, we believe, help to assure the full potential of this project. Given that the cap will be increased shortly, we request that a total of $5,000,000 be appropriated in Fiscal Year 1989 to permit the Corps to continue and initiate work along the New York-New Jersey waterfront. Specifically, this larger sum of money would be used to complete construction along the Weehawken to Edgewater, Jersey City North and Bayonne waterfronts in New Jersey and portions of the Brooklyn waterfront in Upper New York Bay. Of equal importance would be the fact that the Corps would also be able to resume engineering and design work on an additional estimated 12 to 15 reaches that have yet to reach construction.

We, therefore, urge a total appropriation of $5,000,000 as compared to the $1,409,000 allocated for this project to assure cleanup work by local interests and the Corps. A good deal has been accomplished to date. Please persevere your commitments and continue to help us to revitalize our waterfront.

NEW YORK HARBOR AND ADJACENT CHANNELS, NY & NJ

The New York Harbor and Adjacent Channels, NY & NJ study is an on-going reconnaissance study to determine whether any modification of the existing channels in New York Harbor are warranted. Initiated in 1981, this study has resulted thus far in favorable recommendations through completed feasibility studies for improvements to Port Jersey Channel in New Jersey. Commissioner Putnam will elaborate on this project in his testimony.

There is a need for additional vessel anchorage capacity in the Port. While the anchorages that presently exist in the Lower and Upper New York Bays handle vessels consisting largely of self-propelled container, general cargo ships and tankers, additional deep water space for barges is required at the Red Hook Flats Anchorage. The Flats is located west of Brooklyn adjacent to the Federal Bay Ridge Channel and South of Governors Island. Presently, the controlling depth in the anchorage is an average 15 feet at mean low water. This is inadequate for modern tugs and barges.

We request that $400,000 be made available to the Corps of Engineers for a feasibility study of Red Hook Flats at full Federal expense. No funds for this effort are presently in the proposed Fiscal Year 1989 Budget. We strongly urge that $400,000 be provided for this project.

The remainder of our presentation will be provided by Commissioners Putnam and Huerta.

* * * * * * * * *

Thank you, Mr. Kirk. Mr. Chairman and distinguished members of the Subcommittee, I am Borden R. Putnam, Commissioner of New Jersey's Department of Commerce and Economic Development. In that capacity, I also serve as Honorary Chairman of the Department's Maritime Advisory Council. The Council was established to emphasize New Jersey's position as a maritime state and to coordinate statewide waterfront development in the State.

NEW YORK HARBOR AND ADJACENT CHANNELS (PORT JERSEY CHANNEL), NJ

The New York Harbor Adjacent Channels (Port Jersey Channel), NJ presently serves 13 shipping lines at the Global Marine Container Terminal. In 1987, this facility handled 320 vessel arrivals with over 214,000 container units. More than 400 terminal employees with an annual payroll of $16 million as well as another 107 contract workers depend on this facility for their livelihood. As a privately owned terminal, Global pays in excess of $1 million in local real estate taxes annually. In addition, the channel also provides access for the U.S. Army Military Ocean Terminal and the newly constructed Port Authority Auto Marine Terminal. The project is authorized for construction by the Water Resources Development Act of 1986. The Secretary of the Army issued a favorable report in 1987 to proceed with the construction of a 41 foot Federalized channel. The Corps of Engineers has initiated pre-construction engineering and design in Fiscal Year 1988 and we look forward to the continuation of the these studies in Fiscal Year 1989 with construction to commence soon thereafter. We endorse the budget recommendation of $500,000 and strongly urge that these funds be retained and appropriated as proposed.

ARTHUR KILL CHANNEL EXTENSION TO FRESH KILLS, STATEN ISLAND, NJ

The study of the feasibility of deepening and widening the the Arthur Kill Channel Extension to Fresh Kills, Staten Island, NJ was authorized by the Water Resources Development act of 1986 (PL 99-662).

Channel deepening and widening would provide economic benefits for the six deep draft bulk facilities (BP Standard Oil, GATX, Northville Linden, American Cyanimid, Cities Service, Atlantic Sulfur) in the project area that presently handle petroleum, petrochemicals, cement and sulfur in excess of 10

million tons annually and that average 1,200 vessel arrivals annually. The Corps of Engineers has begun combined feasibility and preconstruction/engineering studies to determine the most economical depth to which the channel should be deepened. The budget contains $175,000 for the Corps to continue this effort. This sum is inadequate to maintain what we perceive the intent of Congress to be, namely, a heightened and straightforward effort towards early construction. Port interests' goals are the completion of all feasibility and preconstruction engineering and design studies in Fiscal Year 1990 with construction commencing soon thereafter. The funds presently budgeted will not permit the Corps to maintain this schedule and, therefore, fulfill the intent of Congress or the needs of Port interests. We request that the proposed budget amount of $175,000 be increased to $600,000 to insure a timely completion of all studies for this project at full Federal expense.

I will now ask Commissioner Huerta to elaborate on the balance of our funding recommendations for the other Federal navigation projects in our Port.

* * * * * * * *

Thank you, Commissioner Putnam. I am Michael P. Huerta, Commissioner of Ports, International Trade and Commerce, City of New York. I wish to add my appreciation for this opportunity to convey to you the recommendations for Federal navigation projects in the Port of New York and New Jersey. The projects which Mr. Kirk and Commissioner Putnam have discussed are of tremendous importance to our port. The appropriation of Federal funds to deepen our navigation channels is the key to our success as a port and to the future growth and vitality of our port facilities.

SHEEPSHEAD BAY, NY

Sheepshead Bay is located in Brooklyn, New York and is bordered on the west by Coney Island and on the east by Rockaway Inlet through which ready access to the ocean is available. Sheepshead Bay is home to one of the largest commercial and recreational fishing fleets on the east coast. The existing Federal channel, which is six feet deep and 100 feet wide, is neither deep enough nor wide enough to allow free passage of the fishing vessels. They are subject to damages because of the shoaling of the channel and are subject to severe traffic congestion in the channel due to the narrow section of deep water which increases the potential for accidents involving commercial fishing vessels and recreational boaters.

In addition to the fishing fleet, the bay is also home to Kingsborough Community College's Marine Education Program where a marina to serve the research and operational component of the program has been constructed. The City of New York is prepared to not only provide the local share of the channel improvement costs, but is also planning a multi-million dollar renovation of the piers to provide modern berthing facilities and other infrastructure improvements.

Prior Corps of Engineers' plans for the Sheepshead Bay project had recommended a channel within the bay of 10 feet below mean low water and widened to 200 feet. Outside the bay, the channel should be deepened to 12 feet below mean low water and widened to 250 feet. The improvements are vital to the economic well being of Sheepshead Bay and the Port. We request that $300,000 be appropriated for the construction of this project in Fiscal Year 1989. No funds have been allocated for this project in the proposed Budget.

EMERGENCY RESPONSE SERVICES

The Water Resources Development Act of 1986 authorized the availability of grants for Emergency Response Services under Section 212. During last years budget testimony, the port community made a request before this Subcommittee that funds be made available as a grant for the acquisition of new fireboats. Unfortunately, no funds were contained in the final Fiscal 1988 appropriations. We request that Congress appropriate in Fiscal 1989 a sum of $2,000,000.

The City of New York fireboats respond to fires throughout the harbor, covering over 700 miles of waterfront. During a typical year, our fireboats handle over 2,500 requests for assistance and conduct nearly 4,000 inspections waterfront structures. They respond to emergencies on both sides of the harbor, in New Jersey as well as in New York.

New York Harbor handles thousands of containerships, bulk carriers and other commercial vessels and is the home to cruise ships, barges transporting oil and other chemicals including a groving ferry system. The City's marine division works closely with the Coast Guard and other agencies regarding the shipping of hazardous cargo.

Our fleet of fireboats is aging quickly. We have six fireboats in the marine division with two built prior to 1940. We must not only replace the older vessels, but expand our fleet to meet the demands of an active commercial harbor. It is critical that there exist a modern fleet to fight fires and prevent losses to lives and property. In addition, the City of Nevark, Nev Jersey, has expressed a total funding requirement of $1,000,000 to replace its fireboat. Since our operational requirements and area of coverage are significantly larger than that of the City of Nevark, we view our request of $1,000,000 to be an important first step to a nev and modern fleet. A nev fireboat for the City of Nevark vould be a velcome improvement to the firefighting capability of the Port.

No funds are included in the Federal Budget for this project. Ve strongly urge that $2,000,000 be provided in Fiscal Year 1989 for this project. This will permit the City of Nev York to study operational requirements of fireboats and begin procurement of state of the art vessels to meet these requirements and also permit the City of Nevark to purchase a nev fireboat.

* * * * * * * * *

This, Mr. Chairman, concludes our statement. We knov that the Congress faces painful fiscal decisions in its resolution of our nation's large budget deficit. However, our recommendations for an increase in Federal expenditures are modest. We can only take note that ship channels and the marine terminals they support, contrary to some other types of public expenditures, are investments in our nation's prosperity and to that end warrant your most considerate attention.

On behalf of Mr. Kirk, Commissioner Putnam and myself, let me thank you for the courtesy of presenting our recommendations to you.

Statement of Delaware River Port Authority

I wish to submit this letter in testimony of the strong support of the Delaware River Port Authority for continued funding of the Delaware River Comprehensive Navigation Study, New Jersey, Pennsylvania, and Delaware.

The existing Delaware River navigation system includes six deep draft navigation projects serving the Ports of the Delaware River. These ports support annual vessel passages, according to the U. S. Army Corps of Engineers' records, averaging 44,000 passages and tonnage averaging 114 million tons. The system provides a substantial economic stimulus to the entire region, supporting nearly 100,000 port-related jobs. The major commodities transported are crude oil and refined petroleum associated with seven oil refineries located along the river and its tributaries. Other major commodities include iron ore, scrap, coal, grain, chemicals, limestone, motor vehicles, gypsum and other drybulk shipments, lumber, and containerized general cargo. The system also serves naval vessels at the Philadelphia Naval Base.

The Delaware River Comprehensive Navigation Study is defining the Federal interest in navigation development, especially with respect to future port needs for navigation improvements for the entire Delaware River complex. The main study is addressing the following: Delaware Bay deepwater port for depths to 80 feet; Delaware River deepening to 45 feet; and Chesapeake and Delaware Canal deepening to 40 feet.

The Delaware River Port Authority and the Delaware River and Bay Authority have given their support and sponsorship for the main study.

Due to the extreme economic importance of this study to the Ports of the Delaware River, we urge the Committee to give favorable consideration in continued funding of the study.

STATEMENT OF NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

The New York State Department of Environmental Conservation appreciates the opportunity to comment on the appropriations for the Civil Works Program for FY' 89.

Flood Control and Shore Protection

Damaging floods occur in some portion of New York virtually every year. It is estimated that 1.5 million people live in the nearly 1500 flood-prone communities in the State. Average annual flood damages are conservatively estimated at $100 million. New York State vigorously promotes participation in the National Flood Insurance Program. Even so, only a small fraction of flood losses are covered by insurance. The Corps of Engineers' Flood Protection and Shore Protection programs play a vital role in helping to combat New York's flood and erosion problems. The proposed civil works funding levels fall far short of the needs in New York.

New York State supports funding of all projects as they appear in the budget except where funding levels are inadequate, in which case requests for increased levels of funding are discussed in the following paragraphs.

Jones Inlet

The State of New York is concerned that funds for the Jones Inlet dredging project originally scheduled for 1989 are not included in the civil works budget. This inlet is usually dredged every two (2) years to ensure safe passage. It was most recently dredged in 1987 and has already filled in to the point where navigation is hazardous. We urge a federal appropriation of $2.3 million for the dredging of this inlet and disposal of the dredged material on the beach. Section 933 of the Water Resources Development Act of 1986 authorizes cost sharing of the difference between the least costly alternative of dredged material disposal and that of beach placement. Placement of the dredged material on the beach is necessary to provide protection for the severly eroding shoreline and several endangered public structures. New York State is willing to and capable of providing the required non-federal share of the additional cost.

Fire Island Inlet and Shores Westerly to Jones Inlet

This multipurpose project for beach erosion control and navigation was completed in the mid 1970's and it was anticipated that mechanical sand bypassing would be performed every two years. The bypassing was never initiated because local interests raised concerns and objections which required further studies. These studies are now complete and bypassing may be performed in order to nourish the beaches west of Fire Island Inlet.

The first increment of sand bypassing, involving 700,000 cubic yards of sand, can be initiated in the spring of 1989 if funds are appropriated. This work is critically needed to mitigate and reverse severe erosion at Gilgo Beach where Ocean Parkway, a four lane highway is threatened.

We urge the appropriation of $10 million for the federal share of the first year of this two year project. State funds are currently available for the non-federal share of project costs.

Fire Island Inlet to Montauk Point Reformulation Study

During 1978, the President's Council on Environmental Quality required the Corps of Engineers to reformulate this hurricane protection project. After ten years and the expenditure of $4.7 million, this study is incomplete; and no funds have been included for study continuation in the FY' 89 budget. Without completion of the study, there can be no basis for future planning and project development by Federal or non-federal interests. The Administration has been reluctant to fund the continuation of the study because we have not agreed to provide the non-federal share of the so called "interim project". That project has been determined by our State Coastal Zone Management agency to be inconsistent with the Coastal Zone Management Plan. We need alternatives. Completion of the authorized reformulation plan will enable us to make appropriate decisions regarding the future of our Long Island Shorelands. Without bringing the study to a reasonable level of completion, the majority of the $4.7 million already expended will be largely wasted. New York strongly requests an appropriation of $1.5 million to bring the study to a reasonable level of completion and that Congress direct the Chief of Engineers to complete the study.

Dam Safety

The Water Res urces Development Act of 1986 (P.L. 99-662) authorized the appropriation of $13 million to be distributed to the states to improve their dam safety programs.

As in its budget request for FY' 88, the Administration has again failed to request funds for this purpose in spite of the clear intent of the Congress.

Dam safety is an essential component of New York's civil works program. We have an active program of safety inspections and enforcement actions for high hazard dams. However, we do not have the necessary resources to perform all functions as delineated in the federal model. We urge the appropriation of $13 million for the first year of the five-year program to help provide for additional staff to inspect dams during construction, establish a process for Department approval prior to impoundment and to provide periodic hazard verification, thus reducing threats to life and property.

New York State Canal

We want to thank the Committee for recognizing the needs of the New York State Canal System in the conference agreement for the Fiscal Year 1988 Continuing Resolution. The conference agreement included report language and a specific citation in the report to provide $10 million for operation and maintenance and rehabilitation of the New York State Barge Canal, as authorized by the Water Resources Development Act of 1986 (P.L. 99-662).

However, the Office of Management and Budget (OMB) has refused to honor the conference agreement and release the funds which were provided for the State Canal System, claiming that the intent of

Congress as expressed in report language is not adequate to compel compliance.

OMB cites declining commercial traffic on the Canal as justification for its refusal to provide assistance to the Canal as directed by Congress. Yet at the same time, there are several other waterways which carry equal or even less tonnage than the New York State Canal which are fully funded and maintained by the Corps of Engineers. In addition, the OMB does not consider the multiple non-commercial benefits of the Canal such as flood control, water supply, irrigation, hydropower production and recreation.

New York's Canal is the only waterway in the nation, despite its use for interstate commerce, that is not fully funded by the federal government. The New York State Canal is the only State-owned and operated inland waterway of any significance in the nation. The Canal was extremely important to the westward development of the United States, and it remains a vital part of our interstate shipping network. Unfortunately, a century and half of use has taken its toll on the Canal, which is now in varying stages of deterioration.

We estimate that expenditures for the Canal for the upcoming federal fiscal year will total $32 million for operation and maintenance, and $10 million for rehabilitation. Federal assistance is badly needed to assure continuing operation of the Canal. We again ask that the Committee consider an appropriation of $16 million for operation and maintenance, and $5 million for rehabilitation for Federal Fiscal Year 1989. These amounts are consistent with the provisions of the Water Resources Development Act of 1986.

Since the Office of Management and Budget has elected to ignore the intent of Congress and not release the $10 million from last year's appropriations which was intended for New York State Canal assistance, we respectfully request that legislative language providing Canal funding be included in the Fiscal Year 1989 Energy and Water Development appropriation legislation.

Section 214 - River and Harbor Act of 1965 (PL 89-298)

The Section 214 Program requires the federal government to cooperate with state and local interests to provide assistance for water management planning. No funds have been appropriated in recent years to support the Section 214 program. A total appropriation of $750,000 is currently required.

Today we are facing a continuum of problems that require more cooperation because they are more complex, not necessarily because they are more technically complicated, but because they are institutional and financial nightmares. New water supply alternatives for New York City, for instance, affect three other states even if the source is the Hudson River. Likewise, water management decisions in St. Paul or Detroit affect power production in New York.

The Section 214 Program allows and, in fact, requires, the federal, state and most importantly, the citizens in local government to resolve these issues together. The issue of who benefits, and who pays how much over what period of time, are choices that cannot be dictated from ivory towers. These decisions take time, money and a commitment from local interests.

Today, New York faces a growing water supply deficit of 300-800 million gallons of water per day. There are a variety of solutions which the state, and local and interstate groups have developed. The most cost effective solutions will require the cooperation of millions of people and cost billions of dollars. The longer it festers, the more expensive the solution. We need the help that this program can provide to develop the solution to implement that program.

Statement of Association of State Dam Safety Officials

SUMMARY OF REQUEST

U. S. Army Corps of Engineers - FY 89 Appropriations

Dam Safety
- $13 million for matching funds to state dam safety programs
- $0.5 million for training of state dam safety inspectors
- $2.0 million for dam inspection research
- $0.5 million for inventory update

The Association of State Dam Safety Officials (ASDSO) is a national association of private and public entities responsible for ensuring the safety of dams. We represent 48 State dam safety offices and a wide range of state, federal and private dam safety experts throughout this country. We are the people with the best knowledge of the current status of the safety of dams.

During our country's brief history, dam failures have resulted in some of the most catastrophic disasters recorded. For example:

- West Virginia, 1972: Buffalo Creek Dam failure killed 125.
- Idaho, 1976: Teton Dam failure killed 14 and caused $1 billion in property damage.
- Pennsylvania, 1977, Laural Run Dam failure killed 40 people.
- Georgia, 1977: Kelly Barnes Dam failure killed 39.
- Colorado, 1982: Lawn Lake Dam failure killed 3 in Estes Park and cost the federal government over $5.6 million in disaster assistance expenditures.

However, we may not be taking full advantage of the lesson to be learned. There are currently fewer than 5,000 federal dams and over 80,000 inventoried, non-federal dams in the nation. Nine thousand

of these non-federal dams are rated as "high hazard". About 2,000 of the high hazard dams are currently identified as "unsafe". Yet at the current rate of repair, it will be after the turn of the century before the dams identified in 1981 as "unsafe" are repaired. In the interim, additional dams continue to deteriorate.

The Congress authorized an important dam safety program in the Water Resources Development Act of 1986. Title XII of the Act authorized a five year program in four areas:

1. $13 million per year to assist in improving state dam safety programs. This money is to match, not replace, current state funding.
2. $0.5 million per year to provide training for state dam safety inspectors.
3. $2 million per year for research to develop improved techniques in dam inspection as well as devices to provide continued monitoring of dams.
4. $0.5 million per year to maintain and periodically update a national dam inventory.

The emphasis of Title XII is obviously on building state dam safety programs. Unfortunately in FY 88 and FY 89, the Administration has requested funding only for the inventory update.

ASDSO believes that the States need and can effectively use the $13 million to build their dam safety programs. We also believe that the additional training and research authorizations should be funded in full. By such funding, action is taken to prevent additional failures rather than to react to costly tragedies. On behalf of the citizens that live and work below dams and for all those that enjoy the vast benefits of dams, ASDSO urges you to appropriate funds for the full implementation of Title XII of the Water Resources Act of 1986.

PREPARED STATEMENT OF INLAND WATERWAYS USERS BOARD

Senator JOHNSTON. Finally, the Inland Waterways Users Board created by Public Law 99-662 has sent in a statement which will go into the record at this point.

[The statement follows:]

STATEMENT OF THE INLAND WATERWAYS USERS BOARD

This statement is presented on behalf of the Inland Waterways Users Board, a board established by Congress under Section 302 of the Water Resources Development Act of 1986 (P.L. 99-662) (the "WRDA") for the purpose of developing and making recommendations to the Secretary of the Army with regard to ". . . construction and rehabilitation priorities and spending levels on the commercial navigational features and components of the inland waterways and inland harbors of the United States."

Since its formation last summer, the Board has had the opportunity to contribute to the development of the nation's water resource policy by providing an industry perspective to Congress and the Administration on how our inland waterways should be maintained and improved to maximize their efficiency and economic contribution to the nation. The days of unlimited funds and unrestrained spending are gone, replaced by a new era of budgetary restraint and fiscal responsibility. In no area is it more important to erase the public perception of unwarranted spending then in the water resources area. The WRDA broke new ground in changing these perceptions by establishing increased cost sharing as the cornerstone of the new approach to bring rational and responsible decision making to water resource development. The Board is an important part of this process. With the scheduled increase in the Inland Waterways Fuel Tax which will rise to $.20 per gallon of diesel fuel by 1995, and the establishment of a 50% cost sharing arrangement for the seven critical inland projects authorized in the WRDA, the Board must carefully analyze the inland waterway system and provide recommendations based on its collective perception of priorities. Our increased financial

stake in the system requires that competing interests be weighed and considered in the development of our recommendations and that hard choices be made. This task is difficult, but necessary to establish a credible voice for shippers and users who now share with the Federal government the job of paying for the system they use. The Board can only be effective if it establishes credibility through open and independent formulation of its recommendations. We believe this goal has been met during our first year of existence.

On December 22, 1987, the Board submitted to Congress and the Secretary of the Army its "First Annual Report to the Secretary of the Army and the United States Congress," which set forth the Board's priority recommendations for construction and rehabilitation projects on the inland waterways of the United States. The Report was based on priorities developed by the Board at its September 1987 meeting, and the recommendations set forth in the Report were intended to reflect the Board's priority ranking of projects and to give Congress and the Corps of Engineers ("Corps") general guidance as to where funds could best be used to maximize the efficiency of the inland waterway system. Even though the Corps' preliminary FY 1989 Budget had been prepared prior to submission of the Report, the Report was used by the Corps in finalizing its budget submittal. To develop its recommendations, the Board established three categories representing different priority levels. It was felt that categorizing the projects would provide a useful tool in assessing overall civil works priorities without engaging in a line-by-line analysis of the budget or an overall ranking of projects in priority order. Category 1 was for those projects and studies which the Board felt should be accelerated to the extent possible within existing Corps capabilities, or where possible, for which Corps capabilities could be increased consistent with overall Corps responsibilities; Category 2 was for projects and studies whose current schedule of

completion seemed consistent with scheduled Corps capabilities, and which the Board felt should proceed as planned; and Category 3 was for projects and studies for which the Board felt either: 1) that there was not sufficient information regarding project or study justification to enable it to make a priority recommendation, and thus Board action on such projects or studies should be deferred until additional information was provided, or 2) that the information available to the Board justified a recommendation that the project or study be terminated or delayed.

A copy of the full Report is attached as Exhibit 1 to this statement, but the recommendations contained therein are included below as amended by action taken by the Board at its March 2, 1988 meeting relative to Category 3. The Board submits these recommendations for consideration of the Committee in its review of the FY 1989 civil works budget and development of FY 1989 appropriations:

- Category 1: Projects and Studies Which Should be Accelerated Consistent with Maximum Corps Capabilities or for Which Increased Capabilities Would be Appropriate

  - Construction

    Gallipolis L&D
    L&D 26 (Second Lock)

  - Preconstruction Engineering and Design

    Olmsted L&D (Replacement of L&D 52 & 53)
    Winfield Lock

  - Planning Study (post-authorization justification)

    Mississippi River - Gulf Outlet Inner Harbor Canal Lock

- Category 2: Projects and Studies Which Should Proceed as Planned in Accordance with Scheduled Corps Capabilities

  - Construction

    W.B. Oliver L&D
    Bonneville Lock
    Gray's Landing L&D
    Point Marion L&D
    Smithland L&D
    L&D 26 (Replacement Lock)
    Mississippi River Regulatory Works
    McClellan-Kerr Arkansas River Waterway

- Major Rehabilitation

  Montgomery L&D
  Brandon Road L&D
  Dahlelds L&D
  LaGrange L&D
  Marsailles Dam
  Peoria L&D
  L&Ds 3, 5a, 6, 7, 8, 9, 20, 21, & 22
  (Upper Mississippi River)

- Navigation Planning Studies

  Cumberland-Tennessee Rivers
  Kanawha River
  Ohio River Mainstem
  Monongahela River L&DS 2, 3, & 4
  Arkansas River Basin/Comprehensive Studies
  Gulf Intercoastal Waterway LA-TX
  Columbia River Comprehensive

- Category 3: Projects and Studies Which Should be Deferred Pending Additional Justification, Terminated, or Delayed

  - Planning Study of Kentucky River Modernization (terminate navigation portion of the study)
  - Study of feasibility of Ohio River-Lake Erie Waterway (terminate)
  - Red River Waterway to Shreveport

NOTE TO CATEGORY 3:

With regard to Category 3, the Board at its September 28, 1987 meeting considered including within that category the construction of the Red River Waterway to Shreveport by recommending that construction of additional channel work be deferred pending clarification of the justification of the project using appropriate discount rates, while recommending no deferral of protective work such as bank stabilization. Following the receipt of additional information at its March 2, 1988 meeting relating to the status of the project, traffic projections and related benefits associated with estimated transportation cost savings, the cost/benefit analysis using current and original discount rates, analysis of the Corps' budget showing scheduled and unscheduled work, and the status of the Administration's position on the project, as well as Congressional funding as reflected in the FY 1988 Appropriations, the Board recommended delaying the Red River Waterway to Shreveport if budgetary constraints dictate. This recommendation was based on the current cost/benefit analysis, but also recognizes that 54 percent of the project was complete as of September, 1988.

The Board reached its decision on the Red River Waterway after considerable review, analysis, and discussion. The Board's recommendation reflects the view of the members that, as shippers and users of the inland waterway system, the most pressing need for limited federal dollars is for navigational improvements on

existing rivers and waterways where established tonnages and traffic patterns demand an updated and efficient system. Funding for replacement projects on the existing system will enable delays caused by outdated, unreliable, and unsafe locks and dams to be significantly reduced, thereby enhancing the ability to make use of the waterways where proven benefits exist. It must be emphasized that the Board makes its recommendations from its perspective as shippers on, and users of, the waterways, and that recommendations such as the one on the Red River are intended only to reflect this perspective. Waterway projects are developed for a variety of reasons and the Board's view may not always coincide with other legitimate views which seek to use waterway authorizations and funding as a means of spurring economic growth and development within various regions of the country. It is the Board's hope that its recommendations which do not coincide with the priorities of others are viewed in the proper context of the Board's responsibility to honestly assess the current and future needs of shippers and users of the inland waterways in an era of limited resources.

The Board wishes to emphasize the importance of continued funding for the projects in Categories 1 and 2 at a level which will enable these needed projects to be completed expeditiously. These projects represent the areas in our current system where outmoded and unreliable structures continue to cause traffic disruptions associated with downtime, delays, tow congestion, and unsafe conditions. The seven projects authorized in the WRDA, and the much needed replacement project at Olmsted for which authorization has now been sought before Congress, make up the largest part of the Board's list of projects which should be accelerated consistent with maximum Corps capabilities or which should proceed as planned in accordance with existing schedules. Completion of these projects will enable our waterway system to continue its

important role of providing efficient, low cost water transportation for the benefit of the nation's economy.

We appreciate the opportunity to present the views of the Board before the Committee, and hope the priorities we have established will be considered in your review of the FY 1989 civil works budget and development of FY 1989 appropriations.

EXHIBIT 1

INLAND WATERWAYS USERS BOARD

Washington, D.C. 20314-1000 (CECW-P)

December 22, 1987

President of the Senate
Room S 212
U.S. Capitol Building
Washington, D.C. 20510

Speaker of the House of Representatives
Room H 204
U.S. Capitol Building
Washington, D.C. 20515

Secretary of the Army
Acting through the
Assistant Secretary of the Army (Civil Works)
Room 2E570
The Pentagon
Washington, D.C. 20310-0103

Dear Sirs:

Pursuant to Section 302 of the Water Resources Development Act of 1986 (P.L. 99-662), attached is the "First Annual Report to the Secretary of the Army and the United States Congress" prepared by the Inland Waterways Users Board. This report reflects the recommendations of the Board with respect to construction and rehabilitation priorities on the inland waterways of the United States.

We hope this report will be useful in the process of authorizing and funding navigation projects throughout the inland waterway system.

Respectfully submitted,

John D. Geary

John D. Geary
Chairman

INLAND WATERWAYS USERS BOARD

FIRST
ANNUAL REPORT
TO THE
SECRETARY OF THE ARMY
AND THE
UNITED STATES CONGRESS

DECEMBER, 1987

I. INTRODUCTION

The Inland Waterways Users Board (the "Board") was established pursuant to Section 302 of the Water Resources Development Act of 1986 (P.L. 99-662) (the "WRDA") for the

purpose of developing and making recommendations to the Secretary of the Army with regard to ". . . construction and rehabilitation priorities and spending levels on the commercial navigational features and components of the inland waterways and inland harbors of the United States." The Board operates in accordance with the Federal Advisory Committee Act (P.L. 92-463) and Army Regulation No. 15-1, Committee Management, and the committee sponsor is the Department of the Army, U.S. Army Corps of Engineers (the "Corps"). The Board consists of eleven members (see Attachment 1) chosen by the Secretary of the Army ". . . to represent various regions of the country and a spectrum of primary users and shippers utilizing the inland and intracoastal waterways for commercial purposes . . . ." Ton-miles and commodities carried and shipped throughout the system were used in the selection process to assure a representative membership. The composition of the Board reflects commodity and geographic diversity and a balance between user/carriers and shippers. Six of the Board members represent barge lines, four represent commodity shippers including those who represent coal, grain, petroleum, and chemicals interests, and one member is both a shipper and a user/carrier. The geographic scope of Board representation is nationwide with members who operate on or use inland waterway systems on the West Coast, Gulf Coast, and throughout the Mississippi and Ohio River basins. The Board believes this diversity will help reflect national priority needs throughout the breadth of the system.

The Board would like to express its appreciation to H. J. Hatch, Major General, USA, Director, Civil Works and Executive Director to the Inland Waterways Users Board, and all of the employees of the Corps' civil works program who have answered questions and prepared and organized information for the Board's use.

II. BACKGROUND

The inland river system has long served as one of the major components of our national transportation system. It aided the development of our country through the movement of the raw materials and goods which helped spawn economic growth. As the nation grew, the federal government made a commitment to develop the nation's rivers through lock and dam improvements to alleviate the problems associated with seasonal fluctuations in river depth which impeded navigation. The government's investment in the system corresponded with the industrial growth of the United States, and many industries vital to the expansion of the American economy located along the rivers to take advantage of low cost water transportation. Steel, coal, agriculture, petroleum, chemicals, electric power production--all of these made commitments to the river valleys of America, commitments which continue today. The legacy of the federal government's foresight to invest in the development of inland navigation is the existence today of a modern, efficient waterway system which helps to carry out the goals of national transportation policy. The strength of this policy depends on the ability of each of the modal components to operate in a manner which takes advantage of the inherent strengths and efficiencies of each mode. In order for inland water transportation to operate to its maximum efficiency, the waterways on which it operates must be able to continue to function in a safe and efficient manner.

It is this goal of protecting the investment the nation has already made in the system, coupled with the need to make rational future investments in the system, which serves as the background for Board action. Recently, our inland waterways have been affected by the same problems facing all segments of the economy.

The high cost of maintaining and improving the system in an era of budget deficits, and the need to compete for shrinking federal funds, have resulted in institutional delays in authorizing and funding critical improvements on the inland waterways. Many of the locks and dams in the system, or individual features and components of such projects, approach or exceed their practical design lives, and more will reach this condition each year because of the lag time inherent in project development. The result is that some parts of the present navigation system are characterized by congested choke points either because of size restrictions associated with small, outdated locks which were not designed to handle modern tow traffic, or because of service interruptions associated with structural breakdowns at locks and dams caused by age and deterioration. In either case, the efficiency of the entire system is diminished and national benefits derived from the system are reduced accordingly.

With the passage of the WRDA, a 10-year hiatus in authorizing inland navigation projects was ended.[1] The WRDA, in addition to authorizing seven projects critical to the inland waterways, 50% of the cost of which was to be funded from the Inland Waterways Trust Fund,[2] also provided for a phased-in increase in the Inland Waterways Fuel Tax, which will reach $.20 per gallon of fuel used in inland waterway transportation by 1995. Along with the fuel tax increase came the establishment of the Board whose purpose was to provide recommendations on priorities and funding levels on the navigational aspects of inland waterways. Particularly with the scheduled increase in barge industry cost-sharing, creation of the Board was seen as a means of ensuring a voice in investment decisions for those who now had a greater cost-sharing partnership with the Federal government. This private industry/government cost-sharing partnership has set the tone for Board activity by being a constant reminder of the stake Board members and the industries they represent have in the

waterways system. The recognition of the need to make responsible recommendations on waterways investments is an outgrowth of the basic philosophy that the larger the stake, the more cautious the investment. The Board recognizes that its cost-sharing contribution through payments into the Inland Waterways Trust Fund provides added incentive to act prudently in formulating Board action.

III. DEVELOPMENT OF RECOMMENDATIONS

With regard to development of the Board's recommendations, it should be noted that while vigorous discussion and occasional disagreement preceded arrival at the various recommendations set forth herein, this report reflects the consensus of the entire Board. Also, it is important to stress one general theme that ran through the many discussions at both Board meetings--the importance of viewing the inland waterways in their entirety as a system. This recognizes that many tributary rivers play a vital role in augmenting the overall benefits derived from main stem rivers such as the Ohio and Mississippi and that analysis, planning, traffic flow and delay studies, and other means of measuring and evaluating waterway performance all depend on the synergistic interplay of the various waterways. While a system-wide approach was viewed by the Board as necessary for proper evaluation of priorities, the Board also recognized that a critical evaluation of certain components of the system might lead to reassessment of continued investment in those components.

The Board, established in late spring, first met on July 15 and 16, 1987. This first meeting was spent largely in familiarizing the Board with Corps procedures and organization,

the Corps' budgeting process, and the type and forms of information available to the Board to aid it in its deliberations. At the first meeting, the Board requested from the Corps additional and more detailed information on the civil works program which was provided prior to the Board's September 28, 1987 meeting. This information is summarized in more detail in Section IV below.

After the initial meeting, it was apparent that because of the Board's formation at the tail end of the budgeting process, it would be difficult to provide detailed input on the Corps FY 1989 budget which was to be submitted to the Administration in early Autumn for inclusion in the President's budget. Because of the Board's desire to make some recommendations which the Corps could use in preparing any possible revisions to its final submission of the FY 1989 budget, it was decided that for the sake of making the best use of limited time, the Board's recommendations as reflected in the minutes of the September 28th meeting be used by the Corps as the Board's input into the budgetary process. Despite the limited time the Board was in existence prior to having to make its recommendations, it felt that it would be useful to provide general advisory priority recommendations based on the information it had, rather than to forego making any recommendations. However, the Board's recommendations should be viewed with the recognition of the short time frame during which it could analyze all of the Corps' information and synthesize that information into recommendations.

At the September 28th meeting, the Board chose to assign various projects to three separate categories, representing different levels of priority. Included in the categorization were construction projects, major rehabilitation projects, projects in various stages of preconstruction engineering and design, and navigation planning studies. The Board established the three

categories as follows: Category 1 was for those projects and studies which the Board felt should be accelerated to the extent possible within existing Corps capabilities, or where possible, for which Corps capabilities could be increased consistent with overall Corps responsibilities; Category 2 was for projects and studies whose current schedule of completion seemed consistent with scheduled Corps capabilities, and which the Board felt should proceed as planned; and Category 3 was for projects and studies for which the Board felt either: 1) that there was not sufficient information regarding project or study justification to enable it to make a priority recommendation, and thus Board action on such projects or studies should be deferred until additional information was provided, or 2) that the information available to the Board justified a recommendation that the project or study be terminated or delayed.

In assigning projects to the various categories, it should be noted that the Board made recommendations without regard to whether such projects were subject to Inland Waterways Trust Fund cost sharing, or whether a project was authorized. The Board believes that all such projects which affect navigation fall within the scope of the Board's charge. It should also be noted that with regard to the Board's responsibility to make recommendations on funding levels as well as priorities, it was the Board's position that without having access to the Corps' actual proposed FY 1989 budget, the categorization of projects and studies as mentioned above was an effective alternative means of making quantitative, as well as qualitative, recommendations on the Corps' civil works program. The categorization of projects as indicated gives the Corps guidance as to where the Board believes money could best be spent within the inland navigation area without having to engage in a project-by-project line item analysis of the Corps' budget.

IV. RECOMMENDATIONS

In addition to making the priority recommendations described below, the Board recommended that the Corps prepare answers to questions and data requests relating to various aspects of Corps programs. The responses from the Corps will be useful in future Board deliberations and have helped clarify several areas of concern that the Board identified in its request for additional information. The following information, in various stages of completion, has been, or will be provided to the Board: 1) an update of the National Waterways Study in the form of the Waterways Review which, when published in final form, will provide comprehensive lock-specific data on physical characteristics, performance and traffic, and capacity estimates on the entire system; 2) a complete nationwide inventory of Corps navigation projects including inland and deep draft ports and waterways; 3) the Corps' Task Force Report on Accelerating Planning, Engineering, Design and Construction which focuses on ways in which the Corps can shorten the time required for project development; 4) detailed information on the Inland Waterways Trust Fund with specific emphasis on estimates of out-year receipts and expenditures and the underlying assumptions used in those projections; 5) information on the Corps' computer modeling activities which can simulate the many variables associated with the analysis of the waterways system; and 6) information on the Waterborne Commerce Statistics Center including information on means of improving the time frame for collection and publication of statistics.

With regard to project and study priorities, the following are the Board's recommendations as developed in accordance with the methodology described in Section III above:

- Category 1: Projects and Studies Which Should be Accelerated Consistent with Maximum Corps Capabilities or for Which Increased Capabilities Would be Appropriate

  - Construction

    Gallipolis L&D
    L&D 26 (Second Lock)

  - Preconstruction Engineering and Design

    Olmsted L&D (Replacement of L&D 52 & 53)
    Winfield Lock

  - Planning Study (post-authorization justification)

    Mississippi River - Gulf Outlet Inner Harbor Canal Lock

- Category 2: Projects and Studies Which Should Proceed as Planned in Accordance with Scheduled Corps Capabilities

  - Construction

    W.B. Oliver L&D
    Bonneville Lock
    Gray's Landing L&D
    Point Marion L&D
    Smithland L&D
    L&D 26 (Replacement Lock)
    Mississippi River Regulatory Works
    McClellan-Kerr Arkansas River Waterway

  - Major Rehabilitation

    Montgomery L&D
    Brandon Road L&D
    Dashields L&D
    LaGrange L&D
    Marsailles Dam
    Peoria L&D
    L&Ds 3, 5a, 6, 7, 8, 9, 20, 21, & 22
    (Upper Mississippi River)

  - Navigation Planning Studies

    Cumberland-Tennessee Rivers
    Kanawha River
    Ohio River Mainstem
    Monongahela River L&Ds 2, 3, & 4
    Arkansas River Basin/Comprehensive Studies
    Gulf Intercoastal Waterway LA-TX
    Columbia River Comprehensive

- Category 3: Projects and Studies Which Should be Deferred Pending Additional Justification, Terminated, or Delayed

  - Planning Study of Kentucky River Modernization (terminate navigation portion of the study)
  - Study of feasibility of Ohio River-Lake Erie Waterway (terminate)

NOTE TO CATEGORY 3:

With regard to Category 3, the Board considered including within that category the construction of the Red River Waterway to

Shreveport by recommending that construction of additional channel work be deferred pending clarification of the justification of the project using appropriate discount rates, while recommending no deferral of protective works such as bank stabilization. The Board's position on the Red River project could best be characterized as a conditional recommendation that further channel improvements be deferred subject to further Board review based on additional information on the project's cost and justification being provided to the Board. Because of the general belief that such additional information was needed in order to make a formal recommendation on this project, it was not included in the list of Category 3 projects or studies.

In connection with the discussions surrounding the categorization of projects and studies, the Board discussed the merits of supporting Congressional authorization of the Olmsted L&D which would replace L&Ds 52 & 53 on the lower Ohio River. While recognizing that no authorization vehicle is now pending before Congress, the Board nevertheless agreed to support the inclusion of the Olmsted project in any future authorization bill. The recommendation of support for authorization was made in the context of current authorization policy set forth in the WRDA, i.e., that the Inland Waterways Fuel Tax would not be increased, and that Trust Fund balances would be sufficient at current fuel tax levels and project expenditures to fund the Olmsted project on the same basis as now used for the projects authorized for construction in the WRDA. The Board reserves its right to modify its recommendation of support for authorization of the Olmsted project if future events change the context in which the recommendation was made.

V. CONCLUSION

The inland waterway system is an integral part of the nation's transportation infrastructure and as such contributes to the national economy by enhancing the fulfillment of national transportation policy which recognizes the need for, and importance of, all modes of transportation. Today, the waterways are basically sound and efficient although parts of the system are not operating at maximum efficiency because of downtime or

operating delays due to age or outmoded size of navigation structures. The Board believes that with the advent of the new cost-sharing relationship with the government, users and shippers will be able to help the Corps evaluate components of the system in order to maximize the best use of limited financial resources by directing those resources where they are most needed. Our goal is that the Board will play an important role in establishing an ordered procedure to ensure that projects are studied, rehabilitated, or replaced in a timely manner and with optimum return for investment in the system. We believe that the Board has already made progress toward that goal. In the Corps' efforts to organize and present data on how the Corps' civil works program operates, and how and why certain information is developed and used, it is apparent that the Corps and the Board both have benefited from the exercise. The Board has been able to learn a great deal about the civil works navigation program, although it recognizes that much remains to be learned; and the Corps appears to have benefited from the process of synthesizing a voluminous amount of material into a form usable for Board members unaccustomed to the jargon and complexities of the Corps' civil works efforts. We hope that the actions taken to date and the recommendations made in this report will be useful to the Corps and to Congress in evaluating priority and funding decisions as they affect our waterways.

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[1]An exception of course was the authorization in 1978 of the L&D 26 replacement project on the Upper Mississippi River in § 102 of P.L. 95-502 as part of the same legislation which imposed the Inland Waterways Fuel Tax and established the Inland Waterways Trust Fund.

[2]Gallipolis L&D, L&D 26 (Second Lock), Winfield Lock, Gray's Landing L&D, Point Marion L&D, W.B. Oliver L&D, and Bonneville Lock were authorized in the WRDA; the Mississippi River-Gulf Outlet Inner Harbor Canal Lock, a project previously authorized, was included in the WRDA as one of the projects to be funded partially from the Inland Waterways Trust Fund.

ATTACHMENT 1

MEMBERS

INLAND WATERWAYS USER BOARD

Mr. John D. Geary, Chairman
President
Midland Enterprises Inc.
1400 580 Building
Cincinnati, Ohio 45202

Mr. R. H. Quenon, Vice Chairman
President and CEO
Peabody Holding Company, Inc.
301 North Memorial Drive
St. Louis, Missouri 63102

Mr. Nicholas J. Barchie, Jr.
President
Warrior & Gulf Navigation Co.
Viaduct Road
Chickasaw, Alabama 36611

Mr. Peter J. Brix
Knappton Corporation
9030 NW St. Helens Road
Portland, Oregon 97231

Mr. Carl N. M. Brown
Director, Transportation
Westmoreland Coal Sales Company
2500 Fidelity Building
Philadelphia, Pennsylvania 19109

Mr. Neil N. Diehl
Chairman of the Board
and Chief Executive Officer
Ingram Barge Company
4304 Harding Road
Nashville, Tennessee 37202

Mr. Robert B. Keifer
Vice President
Marine/Surface Transportation
Ashland Oil, Incorporated
2000 Ashland Drive
Russell, Kentucky 41169

Mr. Charles F. Lehman
Vice President
American Commercial Barge
Line Company
1701 E. Market Street
Jeffersonville, Indiana 47130

Mr. John L. McClenathan
Vice President, Grain Marketing
Growmark, Incorporated
1701 Towanda Avenue
Bloomington, Illinois 61702-2500

Mr. L. E. Sutton
President
Dravo Mechling Corporation
400 Poydras Street
Suite 900
New Orleans, Louisiana 70252-2189

Mr. L. E. Thompson
President
Pine Bluff Warehouse Company
P. O. Box 7099
Pine Bluff, Arkansas 71611

SUBCOMMITTEE RECESS

Senator JOHNSTON. With that, the subcommittee will recess until 10 a.m. tomorrow.

[Whereupon, at 2:56 p.m. Monday, April 11, the subcommittee was recessed to reconvene at 10 a.m. Tuesday, April 12.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1989

TUESDAY, APRIL 12, 1988

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:05 a.m. in room SD–138, Dirksen Senate Office Building, Hon. Dennis DeConcini presiding.

Present: Senators Johnston, Sasser, DeConcini, McClure, Cochran, Specter, Bumpers, and Reid. Also present: Senators Armstrong, Bond, Breaux, Danforth, McCain, Metzenbaum, and Pryor.

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator DECONCINI. The Subcommittee on Energy and Water Development will come to order.

Senator Johnston, the chairman, has been gracious enough to ask me to chair the hearings this morning. I have asked my colleagues from Arizona to join me. Senator McCain is here and also Congressman Rhodes.

On behalf of Chairman Johnston, I want to thank all of you for being here. We are going to take Senator Metzenbaum of Ohio and Senator Bond of Missouri first before going to the Central Arizona Project.

We have a very large number of witnesses—a number of expert witnesses. We have the new Governor of Arizona, Rose Mofford, who will be testifying. So, it will take some self-restraint on the part of everyone to hold your oral remarks to a minimum or to summarize those statements. We will make sure that your prepared statements are put into the record in full. The record will be left open for further supplemental statements if necessary. In keeping with the wishes of the chairman, I would ask each person to abide by that rule if we can.

At this time, I will be glad to open the hearing for any opening statements on the general subject of these hearings to Senator McCain and Congressman Rhodes.

Senator MCCAIN. Thank you, Mr. Chairman.

WEST FORK MILL CREEK LAKE, OHIO

STATEMENT OF HON. HOWARD METZENBAUM, U.S. SENATOR FROM OHIO

Senator DECONCINI. We will proceed with Senator Metzenbaum.

Senator Metzenbaum, I understand you also have witnesses here with you today to testify on your important projects in Ohio. We will hear from them later, but you may proceed.

Senator METZENBAUM. Mr. Chairman, Senator McCain, I am very grateful to you for giving me the opportunity to introduce my witnesses. I must say that I am overwhelmingly pleased that the Governor of Arizona and so many people from Texas are here to support these Ohio projects. [Laughter.]

Senator DECONCINI. That's in return for all your past support. [Laughter.]

Senator METZENBAUM. I would like to introduce to the committee Mr. Jon Brady, the director of the Hamilton County Park District, and Mr. Bob Mason who is environmental specialist for the park district. Both of these men are here to talk about a serious problem that has developed over the years at a Corps of Engineers flood control and recreational facility in Cincinnati, Winton Woods Lake.

Today, more than half of the lake's original water volume has been filled with sediment from road, industrial, and parking lot runoff, and half of the lake is lost to boating and most of the fish are dead.

Mr. Chairman, some projects are more deserving than others. All of us think that every project in our state is entitled to special consideration, but in this instance we are talking about a federal facility that is being devastated by reason of this sediment that has been permitted to accumulate for reasons that the park district could not control, such as the road, industrial, and parking lot runoff.

The Ohio River Division Engineer of the Corps of Engineers recommended that demonstration funds, authorized under the 1986 Water Resources Act, be used to clean up the lake. I would very much hope that you would provide them with the needed funds to do the job.

Both Mr. Brady and Mr. Mason will step aside in order that you may hear other witnesses, but I just wanted to have the privilege of introducing them to you and tell you how pleased and grateful I would be if this committee were to see fit to provide support.

Senator DECONCINI. Senator Metzenbaum, we are familiar, or have become familiar just recently, with that project. I understand that it is primarily a problem of sediment filling up an already existing recreational facility; is that correct?

Senator METZENBAUM. That is correct.

Senator DECONCINI. The request that you have before the committee today is for an authorized project, I am advised. Is that correct?

Senator METZENBAUM. That is correct.

Senator DECONCINI. Thank you.

I want to welcome Senator McClure, a senior member on this subcommittee.

Senator McClure, we went ahead without you, but we were trying to accommodate our two colleagues. I will yield to you for any statement that you would care to make.

Senator MCCLURE. I have no statement. Thank you very much.

Senator DECONCINI. Any questions of Senator Metzenbaum?

Senator MCCLURE. No, I have no questions.

Senator DECONCINI. Thank you very much, Senator. We will hear your witnesses testimony later.

Senator METZENBAUM. Thank you.

PREPARED STATEMENT

Senator DECONCINI. I also want to include in the record, a prepared statement submitted by the Ohio Department of Naatural Resources which covers several other items within the state.

[The statement follows:]

STATEMENT OF JOSEPH J. SOMMER, DIRECTOR, OHIO DEPARTMENT OF NATURAL RESOURCES

Mr. Chairman and members of the subcommittee, I am Joseph J. Sommer, Director of the Ohio Department of Natural Resources, and Governor Richard F. Celeste's liaison with the U.S. Army Corps of Engineers. This testimony represents the view of the State of Ohio with regard to the Administration's funding requests for the Federal Fiscal Year (FFY) 1989 budget on water resources development. I am submitting this testimony in support of the funding request for projects and studies included in the Ohio portion of the budget which represents an investment of over $61 million. In addition, Ohio is supporting the funding request for the Ohio River locks and dams, including the proposed $60 million for construction on the Gallipolis locks and dams replacement and renovation project. I would also call to your attention a few critical projects that were not funded, but are worthy of your consideration.

WEST COLUMBUS FLOOD CONTROL PROJECT

Last year we requested limited funding in the FFY 88 budget to enable the Corps of Engineers to initiate preconstruction engineering and design of the $31 million West Columbus Flood Control Project. However, at that time, the final feasibility report had not cleared the Board of Engineers for Rivers and Harbors, and there were other administrative steps required prior to submission of the report to the Congress. Since that time, however, the Board of Engineers for Rivers and Harbors has approved the report. In addition, the so-called Chief's report was signed by General Heiberg earlier this year. Moreover, authorization for the proposed project is included in S. 2100, the water resources authorization bill of 1988 which is now being considered by the U.S. Senate.

As noted in my testimony last year before this subcommittee, the area to be protected by the proposed flood control levee has a history of flooding dating back to 1828. The March 1913 flood (the flood of record) was responsible for the loss of 93 lives and the destruction of 4,000 homes. According to a 1982 flood damage survey, 4,200 residential structures and 470 commercial structures including several schools, hospitals, and health care facilities would receive protection from the flood control project proposed by the Corps of Engineers. This protection is vitally important to the many people who reside in the area and to the many establishments which are located essentially in and adjacent to the heart of downtown Columbus.

As I also reported to you last year, the proposed flood control project enjoys the support of the City of Columbus and federal, state and locally elected officials. In fact, the Ohio General Assembly recently enacted, and our Governor signed into law, a capital improvements measure that includes $1.5 million to assist the City of Columbus in meeting the $5.243 million non-federal cash contribution. What we need now is your support, support in the form of $950,000 to enable the Corps to initiate the necessary preconstruction engineering and design work on the project. We have already lost a year wherein this work could have been underway. We ask your indulgence by not making us wait another year before allowing the work to proceed. We need your help now!

CLEVELAND HARBOR

By September 1988, the Ohio Department of Natural Resources will have invested $9 million toward redeveloping the Cleveland Lakefront with the North Coast Harbor project. The North Coast Harbor will function as the cornerstone for a massive lakefront redevelopment effort bringing jobs, trade, and economic benefits to the City of Cleveland. This expeditious initiative on the part of the state involves components that qualify for federal funding as contained in the Water Resources Development Act of 1986 and the Continuing Resolution for FFY 88.

As you are aware, the Congress appropriated $11 million in the FFY 88 Budget to enable the Corps of Engineers to proceed with the authorized improvements for Cleveland Harbor. However, several complicating factors have arisen concerning varying interpretations of the Water Resources Development Act which have stymied any further progress at this time. We at the Ohio Department of Natural Resources have been working with the Cleveland/Cuyahoga County Port Authority, the City of Cleveland, the affected congressional offices, and various local interests to forge a partnership to effectively meet the requirements of the non-federal obligation. We support the efforts of our Cleveland congressional delegation in its request before this subcommittee to prepare a technical amendment deleting reference to Section "992", a non-existing section in law. The Corps of Engineers' interpretation of this alleged Section "992" is causing confusion and costly delay and has frustrated the completion of the local cooperation agreement. We are eager to execute a Section 215 Agreement that would be consistent with the provisions of Public Law 100-202, as well as the legislative history of the project as reflected in the dialogue of November 6, 1985 between Congresswoman Oakar and Water Resources Committee Chairman Roe (CR, H 97631) and subsequent testimony before this subcommittee.

MAUMEE BAY STATE PARK SHORE PROTECTION PROJECT

Erosion is a critical problem along the Lake Erie shoreline at Maumee Bay State Park. In this area of Lake Erie, the shoreline recedes an average of 14 feet per year. The unprecedented high Lake Erie water levels of the past couple of years has exacerbated the erosion problem. Without the erosion protection project proposed by the Corps of Engineers, the limited land base and the substantial capital improvements planned for the park would be destroyed in a matter of a few short years. Through the efforts of Congresswoman Marcy Kaptur, the Congress authorized the Maumee Bay State Park Shore Protection project in Section 501 of Public Law 99-662, the Water Resources Development Act of 1986. The authorization provides for an erosion control project to protect a now estimated $50 million plus park development complex on the south shore of Lake Eric near the City of Toledo. In accordance with the authorizing legislation, the project is to be cost shared between the Ohio Department of Natural Resources and the Army Corps of Engineers on a 50-50 matching basis. However, due to the many delays encountered by the Corps in obtaining funding for preconstruction engineering and design, it was necessary for the Department of Natural Resources to proceed with construction of the project's eastern segment. That work was completed in 1987 at a cost of $3.5 million. Therefore, the only effort remaining is the shore protection works on the project's western segment.

Our engineering office has worked closely with the Corps of Engineers in the final phase of the preconstruction

engineering and design for the western segment. As a result of our close coordination and value engineering adjustments, the overall costs for the remaining segment of the project has been reduced from $8.8 million to $5 million, a fairly substantial reduction! At present, the so-called General Design Memorandum is scheduled to be completed during the remainder of the current fiscal year. In addition, the Corps is expected to complete plans and specifications during the first few months of FFY 89. At that point, however, all work on the shore protection project will stop unless funding is added by this subcommittee to initiate a construction start for these critical improvements.

As I have emphasized in the past, the State of Ohio has expended $12 million in developing the park to the present time, not including the $3.5 million which has been expended on the "east segment" revetment, which is an off-shore structure designed to provide shore erosion protection. This expenditure alone, again entirely at non-federal expense, has allowed for completion of 1/2 of the project. In addition, the Ohio General Assembly has recently appropriated $36.6 million to enable our Department of Natural Resources to complete our park development plans. These plans include, I might add, a multimillion dollar lodge, vacation cabins, a golf course and all necessary support facilities. When all of this work is done, the residents of Ohio and the surrounding states will be able to enjoy a first class, full development park complex built entirely with non-federal funding. However, as you can appreciate, to protect this investment and thereby ensure the wise expenditure of public funds, the shore erosion project proposed by the Corps must be built in its entirety. We need the Corps help and we need your help to see this project completed. Therefore, we greatly appreciate your consideration in adding the $3 million to the Corps proposed budget for FYY 89 to allow construction to begin.

In closing, I want to express our sincere appreciation to you Mr. Chairman and members of this subcommittee for the outstanding support you have given to the Corps' civil works program in Ohio. This support has been essential towards helping us continue our joint water development efforts with the federal government.

Missouri Flood Control and Water Resource Projects

STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM MISSOURI

Senator DeConcini. We will now hear from the Senator from Missouri, Senator Bond, on the Missouri projects. You may proceed. Your full statement will appear in the record.

Senator Bond. Thank you very much, Mr. Chairman and members of the subcommittee, and my distinguished friends and colleagues from Arizona.

I appreciate the opportunity to testify today in support of funding for flood control and watar resources projects vital to the state of Missouri. With one exception, Senator Danforth and I support the President's fiscal year 1989 budget request and have endorsed the Missouri projects in correspondence to the subcommittee, which I believe you have on file.

As you noted, we are short on time this morning, let me just summarize three projects of particular importance to the Kansas City area.

BRUSH CREEK, MO.

Brush Creek is an area of Kansas City close to the largest and most well-known commercial area, the Plaza. A record flood in 1977, which I witnessed first hand, resulted in 12 deaths and some $66 million in damages. The Corps began engineering and design work on a flood control plan for the area in 1986.

The President has requested $390,000 for fiscal year 1989 to complete preconstruction planning, which Kansas City and we consider a priority project. The city will finance $24 million out of the estimated final cost of $36 million. It is viewed as a catalyst for economic development east of the Plaza area. Without flood control measures, the Plaza will remain in jeopardy and no additional growth can occur. I hope the subcommittee will support the fiscal year 1989 budget request.

BLUE RIVER CHANNEL, MO.

The Blue River Channel is another vital flood control project for Kansas City. The channel of the Blue River, which passes through one of the most heavily industrialized sections of the metropolitan area, is being enlarged and straightened to increase its flood-carrying capacity.

It is a complex project which has received construction funding each fiscal year since 1979. The President has requested $9.1 million for fiscal year 1989 and I urge the subcommittee to appropriate the full amount.

TRIMBLE WILDLIFE AREA, MO.

The Trimble Wildlife Area; this is one project which is not included in the President's budget request, but Senator Danforth and I request that you consider funding for this project.

The Corps allowed the Trimble Wildlife Area to be flooded in 1982 as part of a flood control project located at Smithville Lake. The state was then required by federal law to replace the flooded wildlife area and it did so by purchasing 6,000 acres in another part of the state.

While the state was reimbursed for the land acquisition cost of the new wildlife area, there were considerable other expenses for which the state was not compensated. These included the cost of capital improvements at the new wildlife area and the loss of hunting revenue to the state.

With the support of the Missouri congressional delegation, the Water Resources Development Act of 1986 authorized the payment of $1,569,000 to the state to compensate for these costs. However, this reimbursement was not included in the fiscal year 1989 budget request. Therefore, I request that your subcommittee appropriate the authorized amount.

In conclusion, I would only say that your job is already a difficult one and it is made even more so in these times of constrained federal spending. Senator Danforth and I, and the Missouri congressional delegation, are most appreciative for your consideration of our request.

This concludes my testimony. I appreciate the opportunity to appear before you, and I would be happy to try to answer any questions that you or the other members may have.

Senator DECONCINI. Senator Bond, I don't have any questions.

I note that these projects are authorized. Our problem here, as you have mentioned, is one of allocating the limited amount of funds. I don't dare ask you to prioritize these because, if you are like I am, they are all No. 1 on the list.

I note the Trimble Wildlife Area project is one which you have requested funds for in the past, I believe. I understand it has been a problem since 1982. What is the specific problem that Missouri has today with reference to this project?

Senator BOND. Mr. Chairman, when the Trimble Wildlife Area was flooded I was on the other side of the governmental structure. As Governor, we were required by federal law to come up with a mitigation plan and to develop another wildlife area. Acting in good faith that the federal government would carry out its part of the bargain, we went ahead and made the land acquisition with the understanding that we would come back to the Congress for partial compensation for the land and the mitigation efforts necessary to replace the Trimble Wildlife Area.

On the one hand, when I was Governor, with the Missouri Conservation Department and the support of the Missouri General Assembly, we went ahead and made the investment. We incurred substantial costs, a portion of which we understood would be reimbursed by the federal government.

Senator DECONCINI. It never was.

Senator BOND. We feel that these funds are an appropriate payment.

Senator DECONCINI. When was that commitment made by the federal government?

Senator BOND. This was back when Trimble was flooded in 1982. We had to move immediately and we, in effect, fronted the money from state funds.

Senator DECONCINI. Did the Corps at that time indicate that they were going to fund this project?

Senator BOND. As always, there was a willingness to seek funding. Obviously, the Corps cannot commit the Congress to approve it.

Senator DECONCINI. Very good. Thank you.

Senator McClure?

Senator MCCLURE. Senator Bond, can you either tell us how much of this $1,569,000 on the Trimble is capital cost and how much is hunting revenue?

Senator BOND. I think that there is a mixture in that fund. We will obtain it for you. I think we may have in some prior submissions the full detail, but we will be happy to submit that for the record.

Senator MCCLURE. In terms of the refunding for the state the money that the state put up, was there anything in writing at any time?

Senator BOND. There was a tremendous amount in writing. We will try to distill for you and provide the information.

Senator MCCLURE. I understand that they are very willing to seek funding and they are very willing to make promises that they will do right by you, but sometimes they are not very precise about what it is that they are going to do, and that is what I am wondering.

Senator BOND. We have become increasingly leery of the promises from the federal government and we will have the information for you tomorrow.

Senator MCCLURE. I hope that we can help you, but as the chairman very appropriately mentioned, there is not enough money to do everything that we want to do.

Thank you, Mr. Chairman.

Senator DECONCINI. Thank you, Senator.

Thank you, Senator Bond, very much. The committee will give careful consideration to your request.

Senator BOND. Thank you, Mr. Chairman.

[The statement follows:]

Statement of Senator Bond

Mr. Chairman and Members of the Subcommittee. Thank you for the opportunity to testify today in support of funding for flood control and water resources projects vital to the State of Missouri. With one exception, Senator Danforth and I support the President's FY 1989 budget request and have endorsed the Missouri projects in correspondence to your subcommittee. Since we are short on time this morning, I will focus on three projects which are important to the Kansas City area.

1) Brush Creek. Brush Creek is an area of Kansas City close to the largest and most well known commercial area, the Plaza. A record flood in 1977 resulted in 12 deaths and $66 million in damages. The Corps began engineering and design work on a flood control plan for the area in 1986. The President has requested $390,000 for FY 89 to complete preconstruction planning.

Kansas City considers this a priority project and will finance $24 million out of the estimated final cost of $36 million. It is viewed as a catalyst for economic development east of the Plaza area. Without flood control measures, the Plaza will remain in jeopardy and no additional growth can occur.

I hope the subcommittee will support the FY 89 budget request.

Blue River Channel. This is another vital flood control project for Kansas City. The channel of the Blue River, which passes through one of the most heavily industrialized sections of the metropolitan area, is being enlarged and straightened to increase its flood carrying capacity. It is a complex project which has received construction funding each fiscal year since 1979. The President has requested $9.1 million for FY 89 and I urge the subcommittee to appropriate the full amount.

TRIMBLE WILDLIFE AREA. THIS IS THE ONE PROJECT NOT INCLUDED IN THE PRESIDENT'S BUDGET REQUEST FOR WHICH SENATOR DANFORTH AND I ARE REQUESTING FUNDING. THE CORPS ALLOWED THE TRIMBLE WILDLIFE AREA TO BE FLOODED IN 1982 AS PART OF A FLOOD CONTROL PROJECT LOCATED AT SMITHVILLE LAKE. THE STATE WAS THEN REQUIRED BY FEDERAL LAW TO REPLACE THE FLOODED WILDLIFE AREA AND IT DID SO BY PURCHASING 6000 ACRES IN ANOTHER PART OF THE STATE. WHILE THE STATE WAS REIMBURSED FOR THE LAND ACQUISITION COSTS OF THE NEW WILDLIFE AREA, THERE WERE CONSIDERABLE OTHER EXPENSES FOR WHICH THE STATE WAS NOT COMPENSATED. THESE INCLUDE THE COST OF CAPITAL IMPROVEMENTS AT THE NEW WILDLIFE AREA AND THE LOSS OF HUNTING REVENUE TO THE STATE. WITH THE SUPPORT OF THE MISSOURI CONGRESSIONAL DELEGATION, THE WATER RESOURCES DEVELOPMENT ACT OF 1986 AUTHORIZED THE PAYMENT OF $1,569,000 TO THE STATE TO COMPENSATE FOR THESE COSTS. HOWEVER, THIS REIMBURSEMENT WAS NOT INCLUDED IN THE FY 89 BUDGET REQUEST. THEREFORE, I REQUEST THAT YOUR SUBCOMMITTEE APPROPRIATE THE AUTHORIZED AMOUNT.

CONCLUSION

YOUR JOB IS AN ALREADY DIFFICULT ONE AND IT IS MADE EVEN MORE SO IN THESE TIMES OF RESTRAINED FEDERAL SPENDING. SENATOR DANFORTH AND I ARE GRATEFUL, THEREFORE, FOR YOUR CONSIDERATION OF OUR REQUESTS.

THIS CONCLUDES MY TESTIMONY. THANK YOU, MR. CHAIRMAN, FOR THE OPPORTUNITY TO APPEAR BEFORE THE SUBCOMMITTEE TODAY.

STATEMENT OF HON. DENNIS DECONCINI, U.S. SENATOR FROM ARIZONA

Senator DECONCINI. At this time, I would ask our next witness, Governor Rose Mofford of Arizona, to come forward.

Governor, let me just make a couple of opening remarks, then I will yield to my colleagues.

Arizona is very proud of you and proud of your leadership in the state, particularly as it relates to the Central Arizona Project. We never do anything in a small way in Arizona. We were the first state to initiate a historic cost-sharing agreement with the Department of Interior on plan 6 of the Central Arizona Project.

We took the lead in western states in our ability to legislate and negotiate settlements to Indian water disputes, and we are still involved in those to this very day.

Last year, we took the step of eliminating the multipurpose dam, Cliff Dam, from plan 6 of the Central Arizona Project, and last week Arizona took another unprecedented step in the state's history.

The Arizona State Senate recommended impeachment of the sitting Governor at the time, and today we have the new Governor where the ink is hardly dry on her oath of office. We are very pleased to have the Honorable Rose Mofford here today.

Welcome, Governor. It is indeed a pleasure to have you here with us representing our great state.

As most everyone knows in this room, Governor Mofford is a newcomer to the Governor's office, but, indeed, she is no newcomer to Arizona or to Arizona politics. She held the office of secretary of state for 11 years and has spent her entire working life in public service.

Your experience, Governor, is unmatched by anyone in the state of Arizona. You have seen numerous public officials come and go through the Capital, including my late father who served with you when you were assistant secretary of state and he was on the Supreme Court.

I look forward to your return to this committee many times in helping us to present the case on behalf of Arizona for this very, very crucial and important water project.

I have a more detailed statement I will include in the record, as well as a statement on the Superconductor Super Collider that I will also submit later in the record at the appropriate time.

Senator DECONCINI. I yield to the Senator from Idaho.

Senator MCCLURE. Thank you, Mr. Chairman.

I, too, welcome the Governor. It is no secret, of course, that people have been following with a great deal of interest the political gyrations in your state, if that is the appropriate term to use. Perhaps it is not inappropriate to congratulate you on your assumption of that office, while at the same time commiserating with the people of Arizona for the tribulations that led to that event.

You are very welcome here today. I, perhaps, am the only member of this committee who was in the Congress at the time the Central

Arizona Project was authorized. I have followed its tribulations. We hope that the tribulations of the Central Arizona Project are not as great as those of the governorship in your state. I look forward to your testimony.

[The statement follows:]

STATEMENT OF SENATOR DECONCINI

IT IS A PLEASURE FOR ME TO BE CHAIRING THIS HEARING OF THE ENERGY AND WATER APPROPRIATIONS SUBCOMMITTEE THIS MORNING. WITH SO MANY ARIZONANS IN THE ROOM AND WITH TESTIMONY FROM THE GOVERNOR OF ARIZONA, THE HONORABLE ROSE MOFFORD, I PROBABLY DO NOT NEED TO GO INTO MUCH DETAIL ABOUT MY CONCERNS OVER THE FY 89 BUDGET AND ITS IMPACT ON THE STATE OF ARIZONA. HOWEVER, I WILL MAKE A FEW COMMENTS FOR THE RECORD ON THOSE PROGRAMS WHICH HAVE THE GREATEST AFFECT ON MY STATE.

THE CENTRAL ARIZONA PROJECT IS, AND HAS BEEN, THIS SENATOR'S TOP PRIORITY. THANKS TO CONTINUING SUPPORT FOR THE PROJECT FROM THIS COMMITTEE AND THE DEPARTMENT OF THE INTERIOR, WE ARE VERY RAPIDLY APPROACHING THE LIGHT AT THE END OF THE TUNNEL. THE TUCSON DIVISION IS APPROXIMATELY 61.8 PERCENT COMPLETE AND IF THE FY 89 BUDGET REQUEST OF $220.5 MILLION IS APPROVED, THE TUCSON AQUEDUCT WILL BECOME 79.5 PERCENT COMPLETE. THIS IS MARVELOUS PROGRESS.

I WANT TO TAKE THIS OPPORTUNITY TO COMPLIMENT THE DEPARTMENT OF THE INTERIOR FOR ITS REQUEST OF THE $220.5 MILLION FOR THE CAP IN FY 89. FUNDING AT THAT LEVEL WILL ALLOW THE BUREAU TO UNDERTAKE ITS FULL CAPABILITY ON THE PROJECT AND PERMIT CONTINUED WORK ON THE NON-INDIAN DISTRIBUTION SYSTEMS WHICH ARE ON THE CRITICAL PATH TOWARD COMPLETION, AS WELL AS CONSTRUCTION ON NEW WADDELL DAM. ALSO INCLUDED IN THE CAP FUNDING REQUEST IS $8.2 MILLION FOR CONTINUED CONSTRUCTION FOR A MODIFIED ROOSEVELT DAM.

ALSO OF CRITICAL IMPORTANCE IS THE BUDGET REQUEST FOR SAFETY OF DAMS WORK ON STEWART MOUNTAIN, HORSESHOE, AND BARTLETT DAMS. THE ADMINISTRATION HAS REQUESTED $18.1 MILLION FOR SOD WORK ON STEWART MOUNTAIN DAM. THIS IS A SUBSTANTIAL INCREASE OVER THE FY

88 FUNDING LEVEL AND AN AMOUNT NECESSARY TO MAINTAIN THE PROGRESSION OF WORK NEEDED TO INSURE THE FUTURE SAFETY OF THIS SALT RIVER DAM. I AM DELIGHTED WITH THE $1.1 MILLION REQUEST FOR THE PREPARATION OF A SAFETY OF DAMS MODIFICATION REPORT ON HORSESHOE AND BARTLETT DAMS IN FY 89. WITH THE ELIMINATION OF CLIFF DAM, SAFETY OF DAMS WORK MUST BE UNDERTAKEN AS QUICKLY AS POSSIBLE TO BRING THESE STRUCTURES UP TO NATIONAL STANDARDS AND TO PROTECT DOWNSTREAM RESIDENTS IN THE PHOENIX METROPOLITAN AREA. I COMPLIMENT THE DEPARTMENT OF THE INTERIOR FOR ITS RECOGNITION OF THIS CRITICAL NEED.

ONE PROGRAM OF VITAL IMPORTANCE TO THE STATE OF ARIZONA, NOT FUNDED IN THE ADMINISTRATION BUDGET REQUEST FOR FY 89, IS THE ATMOSPHERIC RESOURCES RESEARCH PROGRAM. WEATHER MODIFICATION ACTIVITIES REPRESENT THE ONLY FEASIBLE MEANS TO AUGMENT WATER SUPPLIES IN THE LOWER COLORADO RIVER REGION. 11 WESTERN STATES HAVE EXPRESSED A STRONG INTEREST IN THE WEATHER MODIFICATION PROGRAM AND AN INTENT TO SHARE IN THE FEDERAL COSTS TO SUPPORT ADDITIONAL ACTIVITIES. WHILE I AM SYMPATHETIC TO BUDGET CONSTRAINTS, WITH THE LARGE FEDERAL INVESTMENT ALREADY MADE IN THIS PROGRAM, IT SEEMS FOOLISH TO HALT FURTHER ACTIVITIES JUST WHEN SOME MAJOR BREAKTHROUGH MIGHT BE RIGHT AROUND THE CORNER. I HOPE THE COMMITTEE CAN SEE ITS WAY TO PROVIDE A MINIMUM OF $3.7 MILLION TO CONTINUE WEATHER MODIFICATION RESEARCH IN FY 89.

WITH REFERENCE TO THE ARMY CORPS OF ENGINEERS' BUDGET, I STRONGLY SUPPORT THE FUNDING REQUESTS FOR ALL OF THE ARIZONA PROJECTS, INCLUDING $450,000 FOR PRECONSTRUCTION ACTIVITIES AT CLIFTON, ARIZONA AND $290,000 FOR THE RILLITO RIVER FLOOD CONTROL PROJECT IN TUCSON. HOWEVER, I WOULD LIKE TO TAKE THIS OPPORTUNITY TO POINT OUT TO THE COMMITTEE, THAT IN ORDER TO COMPLY WITH THE STATEMENT OF PRINCIPLES ENTERED INTO BETWEEN THE NATIONAL COALITION TO STOP CLIFF DAM, $500,000 IS NEEDED FOR THE

Corps of Engineers to begin a reconnaissance phase study of downstream flood control alternatives in the Phoenix Metropolitan Area. No funds have been requested for this activity in FY 89. It is urgent that the $500,000 for this flood control study, contemplated by all parties to the Cliff Dam Agreement, be made available in FY 89 under the Corps' authority of the Gila River and its Tributaries.

I have a separate statement that I will ask be included in the Record which speaks extensively to the critical need to fund the Super Conducting Super Collider.

As a member of the Energy and Water Appropriations Subcommittee, I intend to work closely with our Chairman, Senator Bennett Johnston and Ranking Minority Member, Senator Mark Hatfield, to insure that all projects of importance to the State of Arizona are properly considered in the FY 89 Committee recommendations.

REMARKS BY SENATOR DECONCINI

The Super Conducting Supercollider, or SSC, presents itself as a national imperative of historic proportions. While this Subcommittee is faced with the need to fund an array of important science and energy R & D initiatives, a commitment to construction of the SSC must be made this year if the United States is to retain its leadership in the increasingly competitive field of high energy physics.

Similar efforts sponsored by Western European governments, Japan and the Soviet Union threaten to surpass American achievements in this field if we fail to make a certain commitment to construction of this largest particle accelerator in the world now.

American educators and scientists are alarmed by the steady decrease in the number of our students pursuing careers in science and engineering. At the same time, the number of foreign nationals earning doctorate degrees in physics, for example, in this country has nearly doubled since 1971. Coupled with the international challenge in high energy physics, our traditional position of leadership could be seriously undermined.

In the absence of an American commitment this year to build the SSC, our allies will assuredly turn their significant resources to particle accelerator projects such as those at CERN in Geneva or the Soviet Union, and the finest minds in physics would no doubt follow the action. I call on my colleagues on this Subcommittee to join me in working toward a level of funding that could, in fact, be effectively spent in Fiscal Year 1989 and yet provide a clear signal to the international community as well as our own scholars that we are not prepared to let our leadership position slip.

The SSC holds the promise of serving as the greatest stimulus to American science since we resolved to pursue the challenge of manned spaceflight. Not only will the SSC serve as a valuable tool in basic research, but it will assuredly yield various applications that will be beneficial to society.

Already, study has produced advances in nuclear medicine, cancer treatment, and computer chips.

The 100th Congress has an opportunity to affirm a commitment to build the SSC. The foreign cost sharing Congress seeks to attract is dependent upon a clear demonstration of this commitment. This decision must not be set aside for a new Administration and Congress to consider anew. Rather, we must press forward with this promising new endeavor now, or risk ceding our leadership in the sciences abroad.

I ask that a statement endorsed by the seven States now vying for siting of the facility be included in the record of this hearing. The statement demonstrates the determined and consensus approach these States, as well as many others I might note, have demonstrated in support of advancing not only continued research and development, but construction of the SSC facility at this time. I commend this statement to my colleagues on this panel, and urge that they give serious consideration to the extreme importance of this project.

STATEMENT OF HON. JOHN McCAIN, U.S. SENATOR FROM ARIZONA

Senator DECONCINI. I yield now to my good friend and colleague, Senator McCain.

Senator MCCAIN. Thank you, Mr. Chairman. Thank you for allowing me to attend these very important hearings. I also extend my sincere welcome to Governor Mofford and look forward to hearing her statement.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF SENATOR MCCAIN

I thank the Committee and the distinguished Chairman for enabling me to submit this statement concerning the FY 1989 Budget. I would like to take this opportunity to comment on some of the programs of great importance to Arizona.

As you know, the Central Arizona Project is often referred to as the lifeblood of my state. It supplies the critical water resources Arizona needs for its agricultural, municipal, tribal and industrial well being.

Approval of this year's $220.5 million budget will fund the work needed to keep us on track for timely completion of the project and will enable us to make substantial progress on the Tucson Division in FY 89. This is very welcome news to Arizona and, in particular, the irrigation districts, tribes and communities in the Tucson area which have long and anxiously anticipated the flowing of CAP waters. The budget request also provides for vital safety of dam modifications and other programs of critical importance to my state

We are coming to the end of a long road, Mr. Chairman. The monies requested would bring us ever closer to the culmination of this august and essential endeavor. I applaud the Committee and the Department for its ongoing commitment to the Central Arizona Project.

As the Committee is keenly aware, water resource development is crucial, especially for those of us in the West where population growth and water needs are growing. That is why for a number of years, Mr. Chairman, the Department and this Committee have supported the Bureau's Atmospheric Resources Research Program. I hope that the Committee will recommend the necessary monies to keep the program intact. Many western states are extremely interested in water supply augmentation through weather modification. Eleven states have declared their interest in cost sharing with the federal government for weather modification activities. I think it would be a travesty to abandon this program at a time when the investment we have made to date may soon pay dividends.

Finally, Mr. Chairman, I join Senator DeConcini in stressing the importance of providing $500,000 to the Army Corps of Engineers for downstream flood control studies to protect the Phoenix metropolitan area. With the elimination of Cliff Dam, the Corp's work is critical to the preservation of the cost-sharing agreement underlying Plan 6 and to upholding the statement of principles entered into with the National Coalition to Stop Cliff Dam. I hope and trust that the Committee will be able to recommend the monies needed in FY '89 for this purpose.

Again, I thank the Chairman, and the members of the Committee, for your leadership, guidance and support.

STATEMENT OF HON. JOHN J. RHODES III, U.S. REPRESENTATIVE FROM ARIZONA

Senator DECONCINI. I yield to Congressman Jay Rhodes.

Mr. RHODES. Thank you, Mr. Chairman. Thank you for allowing me to participate in these hearings this morning. I, too, have a statement that I will submit for the record.

I welcome the Governor.

Mr. Chairman, my statement, very briefly, deals with the fairly limited aspect of this appropriation, one which I and many others from Arizona believe is particularly important.

If Senator McClure will remember, in 1968, during floor debates and during events leading to floor debates for the Colorado River Basin Project Act, a lot of attention was paid to the issue of resource augmentation, water augmentation, and to the effect that only through resource augmentation were we going to be able to meet all of our obligations on the Colorado River, including our treaty obligations to Mexico to the South.

ATMOSPHERIC WATER RESOURCES MANAGEMENT PROGRAM

From the House Interior Committee, we have included in our budget request to the House Budget Committee a $3 million appropriation to continue the weather modification studies that have been going on for some years now on both the lower and upper basins.

These have been scheduled by the administration's budget request to be terminated in this fiscal year and many of us believe that so much work has gone into this to this date that it would be counterproductive and not appropriate for us to ignore the directions that were contained in the 1968 Act to proceed with resource augmentation.

I would ask that you consider in your deliberations inclusion of $3 million, which is the bare minimum to keep this particular study proceeding, so that we can determine whether weather modification is an adequate and appropriate method by which we can help water resource augmentation in the Colorado River basin.

With that, I will submit my written testimony for the record, and again welcome the Governor, and look forward to her testimony.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF CONGRESSMAN JOHN J. RHODES III OF ARIZONA

MR. CHAIRMAN, Members of the Committee, thank you for the opportunity to be with you today.

I certainly lend my enthusiastic support to the testimony of our Governor and my colleagues from Arizona, regarding the Administration's proposed funding levels for Bureau of Reclamation (BuRec) and Corps of Engineers (CoE) projects in Arizona. The proposed funding for the Central Arizona Project (CAP) of $220 million is adequate to keep the project construction on schedule.

The Administration's budget proposal also includes much needed funding for CoE flood control projects, the largest of which is continued construction of the Phoenix and Vicinity Flood Control Project. An issue has arisen regarding the scope of CoE financial support to an archaeological resource center at the project site. My hope is the Committee would discuss this matter with the Corps. I would be willing to offer whatever assistance I can contribute to addressing that issue.

Weather Modification Funding Request

I must depart from the Administrations's reclamation and flood control budget recommendations in only one major area. That is the BuRec's Atmospheric Water Resources Management Program -- otherwise known as the weather modification program. The Administration's budget proposal recommends zero funding for FY '89.

I urge the Committee to consider a reallocation of at least $3 million within the BuRec, to retain the significant professional expertise and data that has been accumulated; revitalize the atmospheric water resources program goals and opportunities; and allow the program to begin entering into demonstration cost-sharing agreements with a number of very interested states.

Funding

My $3 million request is supported by the House Interior Committee in its February 25, 1988 budget report to the House Committee on the Budget (Committee Print #4, pp 44-47). Attached is the portion of the report that suggests how the $3 million request for revitalizing the weather modification program can be obtained, within the Administration's overall BuRec budget proposals. This Committee may have other suggestions.

Until the present fiscal year, the weather modification program has been funded at a level of about $5 million ($5.7 million in FY '87). The FY '88 appropriation was $497,000. The earlier level of funding supported a staff of 32 professionals and 10 contract employees, the majority of whom were located in BuRec offices in Denver, Colorado.

History

Water augmentation studies were first authorized in the Colorado River Basin Project Act of 1968, as one means to enhance water supply in the Colorado River Basin, with the primary goal of "satisfaction of the requirements of the Mexican Water Treaty...," which was written into law in 1968 as being a "national obligation."

Results of the BuRec studies over the years, mostly laboratory and field experiments, suggest as much as 2.2 million acre-feet per year of additional Colorado River water supply could be achieved through a comprehensive, basinwide weather modification program. Initial estimates indicate a potential additional water supply of about 1.4 million acre-feet in the Upper Basin; 300,000 acre-feet in in the Lower Basin, and some 500,000 acre-feet in the adjacent basins.

America's commitments to Mexico, contained in the 1944 Mexican Water Treaty, obligate the U.S. to deliver at least 1.5 million acre-feet of Colorado River water annually at the international border.

In 1983, the BuRec proposed an ambitious 80 year, $88 million demonstration program called CREST (Colorado River Enhanced Snowpack Test), to test the effectiveness of actual cloud seeding technology as a means of increasing snowpack. The program was proposed to confirm prior theoretical predictions, as well as to assess social and environmental impacts and reduction of any risks associated with cloud seeding.

The CREST program was not funded. Draft legislation to authorize a specific demonstration program was developed in 1983-84, but never finalized because of the lack of funding of CREST

The BuRec went about beginning a program that was to have served as the first phase of a smaller scale, more affordable program that would have essentially met the objects of the CREST program. The first phase of that project was begun and has been going on for the past two years in the Mogollon Rim area in Arizona. The first phase effort, now coming to an end, involves field measurements and data collection and analysis to determine the quantity of cloud seeding opportunities and the projected quality of the potential results. That effort has been funded by the BuRec's Lower Colorado Regional Office for this final year.

Present Status/Broad State Support

The second phase of the project was to implement a 50/50 federal/state cost sharing program in the Mogollon Rim region. Let me emphasize the broad support this program has not only from states within the Colorado River basin, but from other states as well.

The BuRec has received letters of intent to participate in such a program from at least eight states, including California, Nevada, North Dakota, Utah, Kansas, Texas, Oklahoma and Wyoming. Two California utilities were also interested in participating. The State of Arizona, through the coordinating efforts of the Department of Water Resources, proposed a contribution of $900,000 for a larger cost sharing program with the BuRec. To carry out a full 50/50 cost sharing program, the BuRec estimates it could effectively use $4.2 million in FY '89.

Obviously, given the drastic General Investigations budget reductions for the weather modification program of the past year, and the proposed zero funding for FY '89, the program has been decimated.

From the peak of 32 staff members in the BuRec Division of Atmospheric Resources Research in existence as of January 1 of this year, the staff as of March of this year has been cut by a full 50%. I am told there exists now a staff of approximately 15 BuRec people assigned to this specific project.

The rest have been reassigned or have left government service. All contract employees are gone. The Division has been officially downgraded to an "office."

The FY '88 funding of $497,000 was exhausted by February of this year. The remaining staff is being supported by minor reprograming within the BuRec and by fully reimbursable BuRec weather modification technical assistance being done in other countries -- Morocco and Thailand.

The fact is, the BuRec staff and the considerable professional expertise that has been developed by the Division of Atmospheric Resources Research over the past 15 years will be lost and difficult to retrieve if the Administration's FY '89 budget recommendation is adopted.

Any meaningful program, which would implement the state supported and promoted cost-sharing projects, would require at least $3 million and preferably $4.2 million. Anything less than $3 million would result in a less effective program, barely able to maintain a reduced professional staff that is so important to the entire program.

Additional Support

In addition to the demonstrated state interest, via letters of intent regarding the cost sharing program and other proposals for support by the nine states mentioned earlier, formal resolutions of support for continued federal funding of the weather modification program have been adopted recently by the Western States Water Council; the Colorado River Water Users Association; and the National Water Resources Association. I am advised the program has been strongly supported within the Department of the Interior, but their efforts have not survived OMB mandated reductions.

I ask the Committee to give serious consideration to this proposal; to support a reallocation of a minimum $3 million within the Administration's FY '89 BuRec budget proposal; and keep alive our 1968 "national obligation" to Colorado River Basin water agumentation to help meet our international treaty commitments.

Thank you.

RECOMMENDATIONS OF THE SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

(In Thousands of Dollars)

	Actual appropriations 1987	Appropriations 1988	Budget request 1989	Subcommittee recommendation 1989	Subcommittee recommendation compared with request 1989
Energy and The Environment					
Nuclear Regulatory Commission	401,000	392,800	450,000	450,000	
Nuclear waste disposal fund	499,000	360,000	448,832	448,832	
Department of Energy	299,700	266,550	271,798	271,798	
Uranium enrichment	1,209,494	950,000	1,184,900	1,184,000	
Office of Surface Mining	319,998	308,505	260,160	270,435	+10,275
Payment in lieu of taxes	105,000	105,000	105,000	105,000	
Outer Continental Shelf lands	92,696	93,180	91,296	91,296	
Total, Energy and the Environment	2,925,968	2,476,035	2,811,986	2,821,361	+10,275

RECOMMENDATIONS OF THE SUBCOMMITTEE ON WATER AND POWER RESOURCES

The Subcommittee on Water and Power Resources has reviewed the Fiscal Year 1989 budget requests submitted by the Bureau of Reclamation, the Water Resources of the U.S. Geological Survey and the Federal power marketing administrations. The Subcommittee makes the following recommendations:

Agency	President's request	Subcommittee recommendation
Bureau of Reclamation	$1,010,335,000	$997,289,000
Power Marketing Administrations:		
Alaska	3,159,000	3,159,000
Southwestern	15,389,000	15,389,000
Southeastern	36,767,000	36,767,000
Western area	298,413,000	298,413,000
Bonneville	[1]136,000,000	[1]136,000,000
U.S. Geological Survey, Water Resources Division	133,331,000	145,377,000
Total	1,632,894,000	1,632,894,000

[1] Authority to borrow (16 U.S.C. 838i(b)).

The Subcommittee has the following comments regarding the agency budget requests.

BUREAU OF RECLAMATION

Overview

The fiscal year 1989 budget request for the Bureau of Reclamation's eight appropriation accounts and the permanent appropriations totals $1,010,335,000. The request in terms of budget authority represents a $5.4 million increase over that provided in the fiscal year 1988 Continuing Resolution.

The Subcommittee recommends two modifications to the Bureau's request. First, it is recommended that the Atmospheric Water Resources Management Program be restored to a funding level of $3.0 million for FY 1989. Second, the Subcommittee is convinced that sufficient leeway exists in the budget request to accommodate a decrease of $16,046,000. The Subcommittee recommends that this reduction be achieved by postponing construction of some projects or project features which have been subject to deferrals in recent years; by taking advantage of unobligated funds caused by slippage in construction schedules; and by cost savings from reduced administrative expenses attributable to the Bureau's reorganization and "new direction." The Subcommittee does not intend that this recommendation of a decrease would in any way affect the construction schedule of any project which meets the Bureau's criterion of being "substantially underway."

The Subcommittee finds the amount requested for General Investigations to be sufficient and recommends funding at the requested level.

Construction

The largest portion of the Bureau's budget request is for construction of water resources projects in the 17 Western States. The construction funding request for fiscal year 1989 is $698,236,000. This figure represents a slight decrease from FY 1988 appropriations. The request would allow construction activities to proceed on 26 major projects.

Work would be continued on dam safety projects and on smaller rehabilitation, betterment, drainage, and minor construction projects. In order to accommodate the recommended decrease of $16,046,000, it may be necessary to defer work on some of these activities as discussed earlier.

The regular construction request totals $566.2 million. Other funds requested under the construction appropriation for FY 1989 are $1.0 million for rehabilitation and betterment work; $50.2 million for drainage and minor construction; $67.3 million for safety of dams; and, $17.0 million for recreation and fish and wildlife facilities in the Upper Colorado River Basin.

A new addition to the construction account proposed for FY 1989 is in the category of "Applied Engineering" This program includes a major groundwater recharge demonstration program, a variety of engineering and scientific studies, and the Atmospheric Water Resources Management Program. In previous years, the Applied Engineering program was carried in the General Investigations appropriation. Beginning in FY 1989, the Bureau proposes to fund two of these three items through the construction account.

No Federal funding is requested in FY 1989 for the Atmospheric Water Resources Management Program. Last year's appropriation for this program was $500,000. The Subcommittee notes that previous budget cuts have all but destroyed this program, and recommends an appropriation of $3.0 million for FY 1989. This is the minimum amount required to keep this program operational. Fifteen years of research and demonstration have shown that a comprehensive, basinwide weather modification program could develop as much as 1.5 to 2.0 million acre-feet of water per year to supplement supplies in the Colorado River Basin. The Subcommittee believes this program could yield substantial long-term benefits if sufficient funding is made available.

STATEMENT OF HON. ROSE MOFFORD, GOVERNOR OF ARIZONA

ACCOMPANIED BY:

LARRY LINSER, ACTING DIRECTOR, DEPARTMENT OF WATER RESOURCES

GEORGE BRITTON

Senator DECONCINI. Governor Mofford, finally, it is your turn, and you may proceed.

Governor MOFFORD. Thank you very much.

Mr. Chairman, and members of this important committee, I want to thank each and every one of you for the warm welcome extended to me today.

I appreciate the opportunity to appear before you to discuss appropriations for projects and programs which are of the utmost importance to the state of Arizona. My comments to you today will be brief. I have detailed testimony and ask that I may submit it for your later consideration.

Senator DECONCINI. Without objection, Governor, your testimony will appear in the record in full.

Governor MOFFORD. Thank you.

With me today are George Britton and Larry Linser, acting director of the Arizona Department of Water Resources. We will be happy to respond to any questions you may have after I finish my comments.

Also in the room with me are representatives of several Arizona entities who have an interest in Arizona water resources. For fear of missing anyone, I will not attempt to recognize those present, but the shear number of those here is an indication of the importance of the matter before your subcommittee.

Let me begin by saying that speaking in support of the Central Arizona Project is not a new experience to me. In 1976, before I became the secretary of state, I was elected to the board of directors of the Central Arizona Water Conservation District. In that role I was, of course, involved in the particulars of the project.

As a native of the state of Arizona, I have full appreciation for the value of the limited water resources that Mother Nature has provided us. No one can dispute that our economy and our life style are dependent on a reliable water supply.

To have such a supply, it is essential that we use our limited resources in the most efficient manner possible. Water management and water conservation must be the basic foundation of any policy we pursue in the water resources area in Arizona.

Arizona has implemented a water management program to assure that our supplies are put to use efficiently. A comprehensive ground water management code has been enacted with the stated goal of achieving a balance between our water use and supply by the year 2025.

I strongly support Arizona's water management program. However, controlling ground water use alone will not allow us to reach our water

management goals. The Central Arizona Project is an essential component of our program. We must have the capability to convey and distribute to central Arizona our state's remaining entitlement to the Colorado River water.

I am extremely pleased with the support that Congress has given to the Central Arizona Project and the progress the Bureau of Reclamation has made in constructing project facilities. As I speak, water is being delivered to several cities and irrigation districts. Over 500,000 acre-feet has ready been diverted from the Colorado River and over 500,000 acre-feet is expected to be delivered to users this calendar year alone.

The first priority for construction of project facilities is the aqueduct to Tucson. The schedule calls for delivery of water to the city of Tucson in 1991 and completion of the aqueduct to the south boundary of the Santa Vera Reservation by 1992. I ask that you appropriate sufficient funds to allow for completion of the aqueduct on schedule.

STATUS OF PLAN 6

The Central Arizona Project is more than an aqueduct alone. Plan 6 facilities and non-Indian distribution systems must also be constructed to make a complete project. I urge your support for the appropriation of funds to provide that these features are also completed on schedule.

I am pleased to report to you that the plan 6 cost-sharing agreement is working. The federal government and the Arizona entities which are parties to the agreement have all fulfilled their obligations. Arizona interests have contributed over $42 million toward construction of plan 6 features and the Bureau of Reclamation has maintained a construction schedule to allow completion of features as set forth in the agreement. I fervently hope that all parties can continue to fulfill their commitments.

Cost sharing is not unique in plan 6 features. Various irrigation districts have issued over $70 million in bonds to cost share in the non-Indian distribution facilities. It is important that funds continue to be available to complete these distribution systems so that water can be put to its fullest use and the irrigation districts can repay their obligation for both their bonds and the obligations to the United States.

OTHER ITEMS OF INTEREST

Other matters that I have addressed in my written testimony relate to the need for continued support in weather modification and control on the Colorado River and operation and maintenance costs of reclamation project facilities. Of particular importance is the need to have funds appropriated to maintain the atmospheric water resource management program in the Bureau of Reclamation.

Weather modification on the Salt and Verde Rivers watershed holds great promise to be an integral part of Arizona's water augmentation efforts.

On an indirectly related matter I have urged you to favorably consider funding for construction in 1989 of the world's largest high energy physics research facility, the Supercollider/Superconductor.

Mr. Chairman, I want the committee to be aware that the Central Arizona Water Conservation District concurs in the testimony that I have submitted. I have with me also testimony to be submitted for a number of entities and those include: The Arizona Municipal Water Users Association, the Salt River project, the city of Phoenix, the city of Tucson, New Magma Irrigation and Drainage District, Central Arizona Irrigation and Drainage District, the Maricopa-Stanfield Irrigation and Drainage District, the Irrigation and Electrical Districts Association of Arizona, Pima County, and the Metropolitan Water District of Southern California.

Also, I have a joint statement from representatives of the seven Colorado River basin supporting the weather modification efforts in the Bureau of Reclamation. I ask that you allow me to submit this testimony on their behalf.

Senator DECONCINI. Without objection, it will appear in the record.

Governor MOFFORD. Mr. Chairman, I thank this committee for the opportunity to present my concerns before you today and ask for your continuing strong support for water resources development in Arizona.

Thank you very much.

[The statements referred to follow:]

Statement of Gov. Rose Mofford of Arizona

I thank the Chairman and members of this important committee for the opportunity to make this statement on behalf of the people of the State of Arizona. We are here today to express support for the fiscal year '88-'89 appropriations recommended by the President for water-related projects in Arizona.

There are several projects and programs underway which require your continued support. At the top of the list is the Central Arizona Project. Completion of this project is integral to the wise management of Arizona's water resources and to the goal of reducing dependence on our diminishing groundwater supply.

The Central Arizona Project was authorized by the Congress in 1968 by the Colorado Basin Project Act. The Project was designed so Arizona could use its full entitlement of Colorado River water.

Arizona appreciates the consistent levels of Congressional appropriations which have allowed the Bureau of Reclamation to maintain construction of the Central Arizona Project on schedule. There has been excellent and steady progress since construction of the project began in 1971. Last year was no exception.

The backbone of the Central Arizona Project is the aqueduct which when completed will extend about 335 miles from Lake Havasu on the Colorado River to the south boundary of the San Xavier Indian Reservation near Tucson. Its attendant pumping stations and distribution systems will allow deliveries to municipal, industrial and agricultural customers throughout Central Arizona.

THE AQUEDUCT SYSTEM IS NOW OVER 80 PERCENT COMPLETE. THE GRANITE REEF, SALT/GILA AND THE FIRST FIVE MILES OF THE TUCSON AQUEDUCT ARE COMPLETE AND OPERATIONAL. WORK IS PROGRESSING ON PHASE A AND B OF THE TUCSON AQUEDUCT WITH CONSTRUCTION OF TWO PUMPING PLANTS AND 18 MILES OF PIPELINE AND TUNNEL WORK REMAINING TO BE STARTED.

ALREADY, 500,000 ACRE-FEET OF COLORADO RIVER WATER HAS BEEN DIVERTED. LAST YEAR, WATER WAS DELIVERED TO FIVE CITIES, EIGHT AGRICULTURAL DISTRICTS AND ONE INDIAN COMMUNITY. BY 1989 SEVERAL MORE MUNICIPAL AND INDUSTRIAL CUSTOMERS ARE EXPECTED TO BE ADDED. PROJECT DELIVERIES FOR 1988 ARE ESTIMATED TO BE OVER 500,000 ACRE-FEET.

FIRST PRIORITY OF CONSTRUCTION ON CENTRAL ARIZONA PROJECT FACILITIES MUST CONTINUE TO BE THE MAIN STEM AQUEDUCT TO TUCSON TO ALLOW INITIAL WATER DELIVERY TO BEGIN AS SCHEDULED IN 1991. THERE ARE TWO REASONS WHY COMPLETION OF THE AQUEDUCT TO TUCSON IS CRITICAL. FIRST AND MOST OBVIOUS, WATER DELIVERY CAN BEGIN TO TUCSON AREA USERS SO THAT THAT GROUNDWATER PUMPING MAY BE REDUCED. SECONDLY, THE SOUTHERN ARIZONA WATER RIGHTS SETTLEMENT ACT OF 1982 COMMITTED THE DELIVERY OF WATER TO THE SAN XAVIER AND SCHUK TOAK DISTRICTS OF THE TOHONO O'ODHAM RESERVATION BY 1992. DELAY BEYOND THIS DATE WILL IMPOSE SERIOUS FINANCIAL PENALTIES ON THE FEDERAL GOVERNMENT. THEREFORE, I STRONGLY URGE APPROVAL OF THE PRESIDENT'S RECOMMENDED APPROPRIATION OF $180.4 MILLION FOR THE CENTRAL ARIZONA PROJECT.

ARIZONA CITIES AND AGRICULTURAL DISTRICTS ARE CONTINUING TO PLAN AND CONSTRUCT FACILITIES IN ORDER TO ALLOW CAP WATER TO BE USED. NEW TREATMENT PLANTS HAVE BEEN CONSTRUCTED AND ARE ON LINE FOR THE CITIES OF GLENDALE, MESA, PHOENIX AND SCOTTSDALE. THESE CITIES HAVE ALREADY EXPENDED $150 MILLION FOR THESE NEW PLANTS AND RELATED DISTRIBUTION SYSTEMS. NEW PLANTS ARE PROGRESSING IN

PREPARATION FOR SERVICE TO SEVERAL MUNICIPAL SUBCONTRACTORS. THESE SUBCONTRACTORS HAVE COMMITTED TO EXPEND MORE THAN $110 MILLION DURING THE NEXT THREE YEARS.

DISTRIBUTION SYSTEMS FOR NON-INDIAN AGRICULTURAL SUBCONTRACTS ARE AN IMPORTANT ELEMENT OF THE CENTRAL ARIZONA PROJECT. THESE SYSTEMS ARE NECESSARY IN ORDER FOR PROJECT WATER TO BE USED AS PLANNED. AGRICULTURAL SUBCONTRACTORS FOR PROJECT WATER HAVE COMPLETED OVER 600 MILES OF DISTRIBUTION SYSTEM CANALS. CONGRESS HAS RECOGNIZED THE NEED FOR THESE FACILITIES AND APPROPRIATED SUFFICIENT FUNDS TO ASSURE TIMELY COMPLETION. ADEQUATE FUNDING HAS ALSO ALLOWED THE FEDERAL GOVERNMENT TO MEET ITS COMMITMENT TO DELIVER COLORADO RIVER TO THE AK CHIN INDIAN RESERVATION LAST MAY - SIX MONTHS AHEAD OF SCHEDULE.

I CONCUR WITH THE BUDGET PRESENTED BY PRESIDENT REAGAN WHICH REQUESTS ALMOST $32 MILLION FOR CONTINUED CONSTRUCTION OF NON-INDIAN DISTRIBUTION SYSTEMS IN FISCAL YEAR 1989. APPROPRIATION OF THIS AMOUNT WILL SUBSTANTIALLY COMPLETE THESE SYSTEMS. I URGE YOUR APPROVAL OF THESE REQUESTED FUNDS TO ASSURE COMPLETION OF THIS ELEMENT OF THE PROJECT. THE VARIOUS IRRIGATION DISTRICTS HAVE ASSUMED SUBSTANTIAL RISK BY ISSUING OVER $70 MILLION OF GENERAL OBLIGATION BONDS IN ORDER TO PROVIDE UP-FRONT FINANCING AND COST SHARING OF DISTRIBUTION SYSTEMS. IT IS ABSOLUTELY ESSENTIAL THAT THESE DISTRICTS BE CAPABLE OF DISTRIBUTING CENTRAL ARIZONA PROJECT WATER ON SCHEDULE SO THAT THEY CAN MEET PRINCIPLE AND INTEREST PAYMENTS ON THEIR BONDS. FOR MANY DISTRICTS THESE PAYMENTS HAVE ALREADY BEGUN.

ANOTHER IMPORTANT FEATURE OF THE CENTRAL ARIZONA PROJECT IS THE REGULATORY STORAGE DIVISION WHICH IS MOST COMMONLY KNOWN AS PLAN 6. PLAN 6 PROVIDES FLOOD CONTROL, REGULATORY STORAGE, SAFETY OF DAMS AND RECREATIONAL BENEFITS TO THE PROJECT USERS AND THE PUBLIC IN GENERAL. AS A RESULT OF THE JUNE 1987 AGREEMENT

between the Arizona Congressional Delegation and the National Coalition to Stop Cliff Dam, Plan 6 was modified to among other things, exclude Cliff Dam. This does not reduce in the slightest the need for appropriations to complete the other Plan 6 facilities as planned and on schedule. Appropriations are necessary, both under Central Arizona Project authority and under authority in the Reclamation Safety of Dams Act. With the loss of Cliff Dam it is now necessary to make safety related improvements to existing Bartlett and Horseshoe Dams on the Verde River in addition to previously scheduled modifications to Stewart Mountain and Theodore Roosevelt Dams on the Salt River.

Another change to Plan 6 from the agreement is the need to identify appropriate flood control solutions on the Salt and Verde Rivers and to find a water supply as replacement for that which would have been developed by Cliff Dam. We support continued study in this regard.

With regard to the need to identify flood control solutions we ask that $500,000 be appropriated to the Corps of Engineers for recognizance studies as provided under authority to investigate the Gila River and tributaries.

The need for flood control and safety of dams modifications on the Salt and Verde structures is dramatically clear to any resident of Central Arizona. The Salt and Verde Rivers are situated northeast of the Phoenix metropolitan area. Yet, neither of these rivers has a single acre foot of storage dedicated to flood control. Bureau of Reclamation projections indicate substantial flood potential on the Verde River and on the Salt River as it bisects the Phoenix Metropolitan Area. The

POSSIBILITY EXISTS THAT THERE WOULD BE HUNDREDS OF MILLIONS OF DOLLARS IN DAMAGES TO REAL AND PERSONAL PROPERTY AND A SEVERE THREAT TO THE LIVES AND LIVELIHOOD OF CITIZENS LIVING IN PROXIMITY TO THE RIVER. RESIDENTS OF THE PHOENIX AREA ALSO HAVE SHARP MEMORIES OF SEVERE FLOODING IN 1979 AND 1980 WHICH INFLICTED NEARLY $100 MILLION IN DAMAGES.

THEREFORE, WE STRONGLY SUPPORT EXPENDITURE OF THE $2 MILLION EARMARKED IN THE PRESIDENT'S BUDGET FOR THE STUDY OF SAFETY OF DAMS SOLUTIONS AT BARTLETT AND HORSESHOE DAMS.

FURTHERMORE, WE AGREE THAT THE $8.3 MILLION DESIGNATED FOR WORK AT THEODORE ROOSEVELT DAM AND THE $18 MILLION SET ASIDE FOR STEWART MOUNTAIN DAM WILL INSURE THAT WORK AT THESE SALT RIVER DAMS REMAINS ON SCHEDULE.

ARIZONA HAS NOT SHIED AWAY FROM ITS RESPONSIBILITIES TO SUPPORT THE CENTRAL ARIZONA PROJECT. IN 1986 SEVERAL ARIZONA ENTITIES ENTERED INTO A HISTORIC COST-SHARING AGREEMENT WITH THE SECRETARY OF THE INTERIOR. THIS AGREEMENT PROVIDES THAT ARIZONA WILL ADVANCE FUNDS TOWARDS THE COMPLETION OF PLAN 6 FACILITIES. INCLUDED ARE COST SHARING FOR 20 PERCENT OF THE PREVIOUSLY NONREIMBURSABLE COSTS ALLOCATED TO FLOOD CONTROL.

IN SATISFACTION OF THEIR COMMITMENT, BY MARCH 31, 1988, OVER $42 MILLION HAS BEEN CONTRIBUTED TOWARD THE CONSTRUCTION OF PLAN 6 FACILITIES BY THE NON-FEDERAL PARTIES TO THE COST SHARING AGREEMENT. TO DATE THE FEDERAL GOVERNMENT HAS ALSO FULFILLED ITS OBLIGATION UNDER THE COST SHARING AGREEMENT AND APPROPRIATED SUFFICIENT FUNDS TO ALLOW FOR COMPLETION OF THE REMAINING PLAN 6 FACILITIES ON SCHEDULE.

A MAJOR REQUIREMENT OF THE PLAN 6 COST-SHARING AGREEMENT WAS SATISFIED ON DECEMBER 1, 1987, WHEN THE COMMISSIONER OF RECLAMATION ON BEHALF OF THE SECRETARY OF THE INTERIOR SIGNED THE

Navajo Power Marketing Plan. This plan, negotiated by a number of Federal, state and local interest parties, provides that surplus capacity and energy available from the Navajo Generating Station will be sold at a rate which will provide at least $28 million of revenue per year. These funds will flow to the Central Arizona Water Conservation District to offset the $175 million to be advanced for construction of New Waddell Dam under terms of the cost sharing agreement. The critical project facility which will allow for the sale of this surplus energy is the New Waddell Dam, a feature of Plan 6. Without this dam the project has no ability to provide regulatory storage which will allow management power resources and assure that surplus capacity and energy will be available for sale, when it is most valuable.

Arizona is firmly committed to the requirement that project water will be put to use commensurate with wise conservation practices and consistent with the intent of the Colorado River Basin Project Act. In 1980, the State passed a comprehensive Groundwater Management law. This new law is far reaching and is designed to assure a balance between water use and supply by the year 2025 in most of the project's service area. In order for us to achieve the goals set forth in the code, it is absolutely essential that the Central Arizona Project be completed in a timely manner.

I cannot overemphasize this point. The Phoenix Active Management area is just one example. Under 1985 levels of development the total demand for water was 2,530,000 acre-feet per year. To satisfy this demand, 708,000 acre-feet had to be overdrafted from the groundwater basin. Future municipal, industrial and agricultural conservation, effluent reuse and water supply augmentation will help reduce but will not overcome this unacceptable situation. The Central Arizona Project supply is necessary to achieve the stated goal of a balance between supplies and uses.

In summary, I urge your continued support of funding for the Central Arizona Project to assure that the provision set forth in the Plan 6 cost sharing agreement are satisfied and the aqueduct is completed on schedule to Tucson so that we can begin delivering our full entitlement of Colorado River water to central Arizona.

Mr. Chairman, I want to take this opportunity to also discuss the Bureau of Reclamation's Colorado River Water Quality Improvement Program. When the Central Arizona Project becomes fully operational, Arizona's Colorado River source will represent over 60 percent of the State's dependable water supply. We are very concerned about the salinity levels of this essential supply. President Reagan's budget includes $16.5 million for construction and planning of facilities under the Bureau of Reclamation's program. For the most part this amount is adequate for all projects with one important exception. Planning is complete and the Bureau is capable of beginning construction on the lower winter water portion of the Lower Gunnison Unit. This project has been shown to be feasible and is an important element of the overall salinity control program. I urge you to fund this project in fiscal year 1989. For more details I refer you to a detailed statement regarding this program which has been provided to your Committee by Jack A. Barnett, Executive Director of the Colorado River Basin Salinity Control Forum.

Turning to another issue important to Arizona, I'd like to emphasize our optimism over the investigations into weather modification conducted during the past two winters on the Salt and Verde River systems. We believe we can augment our limited supplies through a long-term program of cloud seeding. A cost sharing arrangement between Arizona interests and the Bureau of Reclamation for the program is currently being discussed and in fact local funds are being used at the present time to support

current Reclamation activities. I understand that making appropriations for this project is not as simple as singularly funding the program in Arizona. A viable program involves continuation of the Atmospheric Water Resources Management Program. We believe, however, that this is justified. Current efforts should extend the techniques to the Colorado River basin where substantial benefits will be realized by all water users in the basin and the Federal government. In this regard I support the recommendations in the House Interior Committee's report to the Budget Committee that the budget for the Atmospheric Water Resource Management Program be restored to a level of $3 million.

I also want to bring to your attention the current and expected future need for appropriations to pay for the federal obligations for operation and maintenance costs of project facilities. Existing and proposed Indian water rights settlements in Arizona have placed the responsibility on the Federal government for payment of operation and maintenance costs associated with delivery of Central Arizona Project water to the Indians. In fiscal year 1989 this cost is estimated to be $6 million. It will undoubtedly increase in the future. Also, the cost of operating the Yuma Desalting Plant as part of the Colorado River Basin Salinity Control Project will be increasing in the future. Substantial funding will be necessary to carry out these Federal obligations. I bring this issue to your attention so you can be aware of our concerns for adequate appropriations in the future. We do not support the proposition that these funds will come from reducing construction programs.

The final subject which I would like to mention is the important role to be fulfilled by this Committee with respect to the Super Collider Super Conductor, the S.S.C. Arizona, as one of the finalists in the S.S.C. site competitions, solidly supports the S.S.C. as a national imperative and not merely

BECAUSE WE BELIEVE THE S.S.C. SHOULD BE BUILT IN THE WEST. ON THE CONTRARY, WHILE I FEEL THAT ARIZONA AND THE WEST WOULD BE THE IDEAL HOST FOR THE S.S.C., IT IS THE UNITED STATES, AS A WHOLE, WHICH WILL BENEFIT FROM THIS MOST IMPORTANT RESEARCH FACILIY. ARIZONA; ALONG WITH SIX OTHER STATES REMAINING IN COMPETITION FOR THE S.S.C., HAS INVESTED A GREAT DEAL OF TIME AND MONEY IN THE EFFORT. INDEED, THE S.S.C. IS AN INVESTMENT IN OUR COUNTRY'S CONTINUING COMMITMENT TO EXCELLENCE AND LEADERSHIP IN HIGH TECHNOLOGY. I URGE YOU TO ENTHUSIASTICALLY SUPPORT THE S.S.C. AND THE INITIATION OF ITS CONSTRUCTION IN 1989.

MR. CHAIRMAN I THANK YOU AND THE COMMITTEE FOR YOUR CONTINUING SUPPORT FOR WATER RESOURCES DEVELOPMENT IN ARIZONA.

STATEMENT OF PIMA COUNTY, AZ

PIMA COUNTY HAS SEVERAL PRIORITY PROJECTS WHICH THE COUNTY AND THE STATE OF ARIZONA SUPPORT FOR INCLUSION IN THE ENERGY AND WATER DEVELOPMENT APPROPRIATIONS BILL FOR FY 1989. WE APPRECIATE THE CONSIDERATION AND SUPPORT THE COMMITTEE HAS GIVEN THE COUNTY'S PROJECTS IN YEARS PAST AND WE ARE ASKING FOR YOUR CONTINUED SUPPORT OF PIMA'S PRIORITIES IN THE FOLLOWING KEY AREAS.

FIRST, WE ARE SUPPORTING THE $290,000 IN THE FY 1989 CORPS OF ENGINEERS' BUDGET FOR PRECONSTRUCTION ENGINEERING AND DESIGN

FOR THE RILLITO RIVER PROJECT. THIS FLOOD DAMAGE PREVENTION PLAN, WHICH CONSISTS OF SOIL CEMENT BANK PROTECTION AND GRADE CONTROL STRUCTURES, WILL STABILIZE THE STREAMBANKS, THUS PREVENTING CHANNEL SHIFTS OF HUNDREDS OF FEET AND THE SEVERE FLOOD-RELATED DAMAGES THAT ACCOMPANY IT. AT THE PRESENT TIME, THE CHIEF'S REPORT ON THE PROJECT IS AT THE SECRETARY OF THE ARMY UNDER REVIEW, AND WE EXPECT APPROVAL SHORTLY. THIS IS A PRIORITY PROJECT FOR THE COUNTY, AND THEY ARE SHOWING THEIR COMMITMENT TO THE PROJECT BY THEIR WILLINGNESS TO SHARE IN THE COSTS OF THE PROJECT IN FULL ACCORDANCE WITH PUBLIC LAW 99-662, THE WATER RESOURCES DEVELOPMENT ACT.

THE SECOND PRIORITY OF THE DISTRICT, WHICH THE STATE IS SUPPORTING, IS THE $206,000 IN THE BUREAU OF RECLAMATION'S FY 1989 BUDGET UNDER THE GROUNDWATER RECHARGE DEMONSTRATION PROGRAM FOR CONSTRUCTION FUNDING FOR THE RILLITO CREEK PROJECT. THIS PROJECT WAS ONE OF THE TWELVE SELECTED FOR FIRST-YEAR CONSTRUCTION FUNDING UNDER THE BUREAU'S GROUNDWATER RECHARGE DEMONSTRATION PROGRAM. THIS PROJECT WAS SELECTED BY THE STATE AS ITS NUMBER ONE PRIORITY PROJECT FOR THIS DEMONSTRATION PROGRAM, AND WE ARE ANXIOUS TO SEE IT MOVE FORWARD. WE BELIEVE THAT GROUNDWATER RECHARGE IS AN EXCITING OPPORTUNITY FOR THE STATE AND POTENTIALLY ONE ELEMENT OF THE TOTAL GROUNDWATER PICTURE THE

STATE WILL BE COUNTING ON AS IT WORKS TO MEET THE WATER SUPPLY NEEDS OF THE FUTURE.

THE THIRD AND FINAL PRIORITY OF THE COUNTY WHICH WE ARE SUPPORTING IS THEIR REQUEST TO HAVE THE COMMITTEE PLACE A HIGH PRIORITY ON THE TANQUE VERDE PROJECT (NEAR FORTY NINER COUNTY CLUB ESTATES) WITHIN THE CORPS' SECTION 205 SMALL FLOOD CONTROL PROJECTS AUTHORITY. WE ARE ASKING THAT THE CROPS BE REQUESTED TO PROCEED WITH CONSTRUCTION FOR THIS PROJECT WITHIN THE SECTION 205 FY 1989 FUNDING. DAMAGES TO THE AREA HAVE BEEN EXTENSIVE IN THE PAST, IN FACT, FAR MORE DRAMATIC THAN EXPECTED FOR THE RELATIVELY FREQUENT STORM EVENT LAST EXPERIENCED IN 1983. PRESENTLY, THE FEASIBILITY STUDY IS PROCEEDING WITH PIMA COUNTY SHOULDERING ITS OBLIGATIONS BY PAYING 50% OF THESE STUDY COSTS, AGAIN IN ACCORDANCE WITH P.L. 99-662.

THESE THREE ITEMS ARE PRIORITY ISSUES FOR THE COUNTY AND WE APPRECIATE YOUR EFFORTS IN CONSIDERING OUR NEEDS.

STATEMENT OF CITY OF PHOENIX, AZ

I am pleased to be able to support President Reagan's budget request for the Central Arizona Project (CAP). The President's request is designed to keep the entire project on the schedule which was agreed to in the historic local cost sharing agreement signed in April of 1986. That agreement provides for the contribution of $371 million in local up-front cost-sharing from eleven Arizona parties between 1986 and 1995. To date the City of Phoenix has contributed over $8 million of its $33 million share of these local costs. In addition, the City will provide at least $140 million over the life of the project toward repayment of the CAP, as provided by law.

Since 1984, the City of Phoenix has spent $66 million on the construction of a new treatment plant and distribution system for the delivery of the CAP water. The City is currently under design on a plant expansion to double the treatment plant's capacity within three years and has programmed $25 million in additional distribution system construction over the next five years. This year the City will distribute approximately 60,000 acre feet of treated CAP water to our customers, which will make up over 20% of the City's total supply. This represents a 50% increase over our use last year and reflects the City's commitment to put the CAP water to use as quickly as possible. Ultimately, the Central Arizona Project will supply over one-quarter of the water needs of the City's projected two million customers. Clearly, Phoenix is committed to the success of the CAP.

The timely completion of the Central Arizona Project, including the Plan Six features, is of great importance to the City of Phoenix. Last year the City suffered a great disappointment with the removal of Cliff Dam from the Plan Six features of the CAP. Without Cliff Dam as part of Plan Six, the City will continue to live under the threat of floods like those we experienced in the late 70's and early 80's and with the potential for a disastrous failure of one of the federal government's upstream dams. Additionally, Plan Six was to provide badly needed water conservation and recreational functions. Currently, the Secretary of the Interior with the assistance of the Secretary of the Army is looking for ways to replace the flood control, dam safety, water supply and recreational functions of Cliff Dam. We are committed to assisting the Secretary in a speedy completion of his tasks. Therefore, I respectfully request that the Committee support the President's appropriation request for the Central Arizona Project and Safety of Dams so that the United States and the people of Arizona can finish this vital project as rapidly as possible.

On another matter, I wish to offer both a word of support and a note of caution concerning the Bureau of Reclamation's weather modification program. We are optimistic that we can supplement our limited local supplies through a long-term program of weather modification. A cost sharing program is currently being worked out for a research and demonstration program to be conducted by the Bureau's Division of Atmospheric Resources Research. The City urges your support for the House Interior Committee's recommendation to restore approximately $3 million to the Bureau's budget for that purpose. However, I wish to point out that under the Supreme Court's decision in Arizona v. California, all of the water in Arizona's tributaries to the Colorado River belongs to Arizona. Consequently, no water generated on these watersheds, whether through weather modification or watershed management, should be used to supplement the flows of the Colorado River or to help meet the Mexican Treaty obligation.

On behalf of the nearly 1,000,000 citizens of the City of Phoenix, I want to thank the Committee for its continuing support for these important programs.

STATEMENT OF CITY OF TUCSON, AZ

The people of Tucson greatly appreciate the funding support your Committee has given over the years to the Central Arizona Project. We ask your continued help in achieving the timely completion of the Project.

The City of Tucson is one of the largest metropolitan areas in the United States wholly dependent upon groundwater for its continued existence. Although the citizens of Tucson have, through voluntary conservation programs, significantly reduced their daily per capita water demand since 1974, current demand for water exceeds renewable supplies by a ratio of more than two and one-half to one.

Arizona adopted in 1980 a groundwater code which established a long range program for stabilizing underground water supplies. The Code designates four geographic units as Active Management Areas (AMA). The Tucson Active Management Area encompasses the Upper Santa Cruz Valley Basin and the Avra/Altar Valley Basin - current sources of the City's water and the basins from which the mines, farms and Tohono O'Odham Nation in the Tucson area derive their water supplies. These basins are now subjected to serious annual overdrafts. The goal of the Tucson Active Management Area, under the 1980 Code, is safe yield; that is, a balance between recharge and withdrawals by January 1, 2025. In addition to its successful conservation program, Tucson has made significant investments in the effort to achieve this balance by buying and retiring farms in the Area, and by substituting effluent re-use for groundwater withdrawals.

The crucial element for achieving this balance, however, is the delivery of Colorado River water to Southern Arizona through the Tucson Aqueduct. Completion of the Aqueduct is now scheduled for 1992, with first water deliveries to Tucson in 1991.

From its commencement, the Bureau has moved the Project along with exceptional efficiency. Major construction is scheduled in fiscal 1989 for Phase B of the Tucson Aqueduct in order to complete the Aqueduct on schedule.

Mr. Chairman, the State of Arizona is unified in its support for completion of the main CAP Aqueduct down to its terminus in Southern Arizona as the first priority for the expenditure of CAP funds. The Governor, the Central Arizona Water Conservation District, and the major water users in the state all endorse this position.

The Tucson Aqueduct will deliver needed municipal and industrial water to the more than half a million people of the Greater Tucson area. These users will begin repayment of the capital costs of the Project as soon as the Aqueduct is completed.

The City of Tucson also supports the continued funding of the elements of Plan 6, consistent with the historic cost-sharing Agreement between the United States and eleven Arizona parties.

We respectfully urge this Committee to continue the practice of making appropriations commensurate with the Bureau's full work capability.

STATEMENT OF THE SALT RIVER PROJECT

Mr. Chairman, thank you for the opportunity to submit this statement for the record in support of the U.S. Department of Interior Fiscal Year 1988-89 appropriations for water resource development in Arizona.

My name is John Lassen, and I am president of the Salt River Project, the nation's oldest and, some would say, most successful multi-purpose reclamation project.

The Salt River Project is composed of the Salt River Project Agricultural Improvement and Power District and the Salt River Valley Water Users Association. Together, the Association, a private water delivery organization, and the District, a political subdivision of the State of Arizona, provide water and power to some 250,000 acres and about a half million customers in the Phoenix metropolitan area.

As an agent of the federal government, the Salt River Project operates six dams on the Salt and Verde rivers northeast of Phoenix. These structures impound the runoff from a 13,000-square mile watershed to provide the surface water supplies for agricultural, residential, recreational, municipal and industrial use in Central Arizona.

From the perspective of water manager and water rights administrator, the Salt River Project believes the completion of the Central Arizona Project (CAP) in a timely fashion is critical to prudent water management in Central Arizona. For that reason, we believe the President's recommended budget of $220.5 million for CAP construction in fiscal year 1988-'89 is appropriate for on-time completion of CAP facilities.

Of particular concern to us, however, is the need for substantial safety of dams modifications at Theodore Roosevelt and Stewart Mountain dams on the Salt River.

At the time these structures were designed and built by the National Reclamation Service, later known as the U.S. Bureau of Reclamation, the dams were thought to be sound and able to withstand the normal expected watershed runoff impounded in their reservoirs.

Today's state-of-the-art engineering standards, however, indicate the need to modify the dams. Additionally, the U. S. Bureau of Reclamation has determined that these dams cannot withstand the probable maximum flood which could occur on the watershed. Spillway expansion and foundation reinforcements are required.

The need for these modifications was brought into sharp relief for the residents of the Phoenix metropolitan area during a series of devastating floods in 1979 and 1980. Total damage to personal and real property amounted to more than $100 million. More than $13 million damage was done to Salt River Project facilities, alone.

Now, Bureau estimates place the potential for runoff at nearly four times what was experienced during that flooding.

The safety of dams modifications recommended by the Bureau of Reclamation, however, will insure that the 2.5 million residents of the Phoenix area are not subject to that kind of risk again.

Therefore, we respectfully but strenuously urge you to support the President's recommendation to make available at least $8.3 million at Theodore Roosevelt Dam and $18 million at Stewart Mountain Dam in the coming fiscal year to permit these modifications to proceed on schedule.

As you are aware the Arizona Congressional Delegation and the National Coalition to Stop Cliff Dam agreed in June 1987 to delete the construction of Cliff Dam on the Verde River from the Plan 6 component of the CAP. Cliff was designed, not only to provide water storage on the Verde, but to provide flood control and to solve safety of dams problems at existing the Horseshoe and Bartlett dams on the Verde.

With the demise of Cliff Dam, a solution to the safety of dams problems at Horseshoe and Bartlett is even more urgent. Accordingly, we urge you to include in the Energy and Water Appropriations the recommended $2 million to study safety of dams alternatives at those two dams.

Mr. Chairman, the Salt River Project and all Arizonans appreciate the consideration given by the Congress to the need for timely appropriations for the Central Arizona Project. Completion of the CAP to this point has been the result of cooperation and compromise between the federal government and local, Arizona interests.

Appropriations for Fiscal Year '88-'89 at the level recommended in the President's budget will insure that the cooperative relationship continues and the progress on the CAP, this most vital of projects to Arizona, continues on schedule.

Thank you, again, for the opportunity to present this statement.

STATEMENT OF THE ARIZONA MUNICIPAL WATER USERS ASSOCIATION

Mr. Chairmen and members of the Committees. My name is Roger Manning and I am Executive Director of the Arizona Municipal Water Users Association. On behalf of the Association I greatly appreciate the opportunity to offer this statement in support of fiscal year 88-89 appropriations recommended by the President for features of the Central Arizona Project, a project critically important to Arizona's future.

Let me begin with a few words about the Association and its members. The Association is a voluntary, non-profit corporation established by cities in Maricopa County, Arizona for the development of urban water policies. The members include the cities of Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale and Tempe. The Association's Board of Directors is comprised of the Mayors of each member city. Collectively, the population of the member cities of the Association accounts for nearly 85 per cent of the approximately 2.1 million people within Maricopa County. The Association's member cities have signed Central Arizona Project (CAP) water delivery subcontracts for 205,400 acre-feet of water---about 75% of the CAP municipal drinking water supply initially earmarked for Maricopa County or about two-fifths of the entire CAP municipal drinking water allocation. Already, about $150 million have been expended to construct water treatment plants and associated distribution systems for the CAP drinking water supplies of the cities of Glendale, Mesa, Phoenix and Scottsdale. Expansions of existing treatment plants and construction of additional ones are contemplated since the Association's member cities anticipate the opportunity to contract for additional CAP drinking water in the near future.

The Association's members view CAP water as the foundation upon which our water resource management plans and programs are and will be developed. We can't achieve the goals of Arizona's 1980 Groundwater Management Act without CAP water. We can't achieve safe yield of our presently ever-diminishing groundwater supply without CAP water. We can't achieve an eventual balance between water demand and dependable supply without CAP water. We can't provide for future growth and development without CAP water. The Association's member cities are indeed fortunate the CAP Aqueduct is completed in our area and that CAP water is now being delivered to our citizens. We have in hand a valuable insurance policy on Maricopa County's future economy and quality of life. I can't stress how much the Association and its member cities are deeply appreciative of the consistent levels of Congressional appropriation which have allowed the Bureau of Reclamation to maintain construction of the CAP Aqueduct on schedule.

The CAP Aqueduct is over 80 per cent complete with water deliveries estimated at over 500,000 acre feet in 1988. But this does not include Pima County, particularly the City of Tucson and the San Xavier District of the Tohono O'Odham Reservation. Pima County and Maricopa County are alike in at least one respect: CAP water is our future. The Association and its members agree that the first priority for construction of CAP facilities is the completion of the Aqueduct to its terminus in Pima County and strongly support the appropriation of the funds necessary to allow for its completion on schedule.

Nevertheless, the CAP Aqueduct is only the backbone of the project. The regulatory storage division of the CAP or Plan 6 must also be constructed to complete the CAP. Plan 6, essentially construction of Waddell Dam on the Agua Fria River and modifications to existing dams on the Salt and Verde Rivers,

will provide CAP regulatory storage, flood control, safety of dams and recreational benefits to the public.

Plan 6 is perhaps most well known not for the benefits it will provide, but for the fact that it is the subject of a historic cost-sharing agreement between several Arizona entities, including six member cities of the Association, and the Secretary of the Interior. This momentous agreement requires that Arizona entities advance funds towards the completion of the various features of Plan 6 including 20 per cent of the heretofore nonreimbursable costs allocated to flood control.

As Governor Mofford has indicated, the Plan 6 cost-sharing agreement is working. All parties to the agreement---federal, state, local---are fulfilling their respective commitments. The Bureau of Reclamation has been able to maintain a construction schedule to allow for the completion of the features as set forth in the agreement. As of 1 April 1988, over $42 million have been contributed by Arizona entities with about $14.8 million advanced by the Cities of Chandler ($1.3), Glendale ($1.3), Mesa ($2.0), Phoenix ($8.2), Scottsdale ($1.3) and Tempe ($0.7). And, pursuant to the cost-sharing agreement, additional contributions will be forthcoming from Arizona entities. The Association is confident that sufficient funds will continue to be appropriated by Congress to meet the Plan 6 construction schedule and that all parties to the cost-sharing agreement will be able to satisfy their obligations.

In conclusion, let me reiterate our appreciation to you Mr. Chairmen and members of the Committees for the opportunity to present our views. Moreover, the Association and its member cities once again want to express its profound gratitude for your strong support for the CAP and your keen insight about its role in the prosperity of Arizona, the west and the nation. The CAP is everybody's lifeline, everybody's future. Thank you.

STATEMENT OF THE IRRIGATION & ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE. I APPRECIATE THIS OPPORTUNITY TO APPEAR IN SUPPORT OF OUR GOVERNOR, ROSE MOFFORD, AS SHE EXPLAINS TO YOU THE NEED TO CONTINUE THE APPROPRIATIONS FOR THE CENTRAL ARIZONA PROJECT.

THE IRRIGATION AND ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA IS A NON-PROFIT ARIZONA ASSOCIATION COMPOSED OF IRRIGATION, ELECTRICAL AND WATER CONSERVATION DISTRICTS AND THE AK-CHIN INDIAN COMMUNITY. OUR MEMBERS HAVE CONTRACTED FOR OVER HALF OF THE AGRICULTURAL WATER SUPPLY OF THE CENTRAL ARIZONA PROJECT. THUS, WE HAVE A VITAL INTEREST IN THE TIMELY COMPLETION OF THE PROJECT. OUR MEMBERS WERE AMONG THE FIRST SUPPORTERS OF THE CENTRAL ARIZONA PROJECT AND HAVE SHOWN THEIR CONTINUING SUPPORT BY PLEDGING THEIR LANDS TO FUND OVER $60 MILLION OF BONDS FOR DISTRIBUTION SYSTEMS TO OUR MEMBERS. AFTER FOUR DECADES OF STRUGGLE, WE SAW THE FIRST CAP WATER DELIVERED IN 1986 AND LAST SPRING WITNESSED THE INITIAL DELIVERIES INTO THE SANTA ROSA AQUEDUCT, THE LARGEST SINGLE DISTRIBUTION SYSTEM OF THE PROJECT. WE HAVE PUT OUR MONEY WHERE OUR MOUTH IS. WE HAVE MORTGAGED OUR LANDS AND WE HAVE BET ON ARIZONA'S FUTURE.

WE HAVE ALSO ACCEPTED THE RESPONSIBILITY FOR CONSERVATION. FOR EVERY ACRE FOOT OF WATER DELIVERED TO AGRICULTURE FROM THE CENTRAL ARIZONA PROJECT, AN ACRE FOOT OF GROUNDWATER WILL NOT BE PUMPED. INSTEAD IT WILL BE CONSERVED IN THE LEAST EXPENSIVE AND MOST EFFICIENT WAY GROUNDWATER CAN BE CONSERVED, BY LEAVING IT WHERE IT IS. OUR MEMBERS ARE ALSO EXPLORING WAYS TO CONSERVE WATER IN AGRICULTURAL APPLICATIONS. ACHIEVING THESE CONSERVATION MEASURES THOUGH IS SIGNIFICANTLY DEPENDENT ON TIMELY COMPLETION OF THE CENTRAL ARIZONA PROJECT. WE ARE EXPLORING NEW TECHNOLOGIES AND RECHARGE APPLICATIONS AND SUPPORTING THE EFFORTS OF THE BUREAU OF RECLAMATION TO INVESTIGATE THE POTENTIAL FOR WEATHER

MODIFICATION IN CENTRAL ARIZONA. ALL OF THESE EFFORTS MAY BE NECESSARY TO GUARANTEE LONG-TERM WATER SUPPLIES IN OUR AREA. THE CENTRAL ARIZONA PROJECT, HOWEVER, IS THE SINGLE KEY TO SUCCESS IN THIS EFFORT. WE URGE YOUR CONTINUED SUPPORT FOR THE PROJECT IN ORDER THAT WE MIGHT PLAN FOR THE WATER SUPPLIES OF THE FUTURE NOT ONLY FOR AGRICULTURE BUT FOR THE HUNDREDS OF THOUSANDS OF PEOPLE WHO ARE MIGRATING TO CENTRAL ARIZONA.

THANK YOU FOR THE CONTINUING SUPPORT YOU HAVE GIVEN THE CENTRAL ARIZONA PROJECT. WE URGE YOU TO PROVIDE THE FUNDS TO FINISH THE PROJECT AS QUICKLY AND EFFICIENTLY AS THE BUREAU AND WE CAN WORK TOGETHER TO GET IT DONE.

Statement of the Maricopa-Stanfield Irrigation & Drainage District

My name is John E. Smith. I am President of the Board of Directors of the Maricopa-Stanfield Irrigation & Drainage District which comprises approximately 89,000 acres of irrigated land in northwestern Pinal County, Arizona. On behalf of the District's Board of Directors and landowners, I wish to thank you for the opportunity to present this statement and to express our full support of the State's testimony which has been presented to you.

As a result of the support of your Subcommittee and the Congress in meeting the schedule of funding for the Central Arizona Project (CAP) and its irrigation distribution systems, the 56-mile long joint use Santa Rosa Canal was completed during 1987 along with approximately 50 miles of our District's distribution laterals, making it possible to deliver over 27,000 acre-feet of CAP water to lands in the southern portion of the District. Delivery of CAP water to District lands was a significant milestone and the culmination of 25 years of planning by our District for this essential water supply.

The Santa Rosa Canal, a jointly-used main conveyance facility, also provided for initial deliveries of CAP water to lands in the northerly portion of the Central Arizona Irrigation and

Drainage District as well as to lands in the Ak-Chin Indian Reservation. Delivery of water to the Ak-Chin Indians was initiated about six months in advance of the Federal government's January 1, 1988 commitment under the Ak-Chin Settlement Act. Maricopa-Stanfield is the Watermaster responsible for operation and maintenance of the Santa Rosa Canal. During 1987, approximately 15,000 acre-feet of water were delivered to the Central Arizona District and about 20,000 acre-feet to the Ak-Chin Indian Community.

I am also pleased to report that bids were recently received on the District's last major distribution system, West Distribution System Unit III, and consistent with all other units, the low bid was well below the funds allocated therefor. The East Main Canal and its two distribution system units are in various stages of construction. With completion this spring of the East Main Canal and East Distribution System Unit I, the District will be able to deliver CAP water to more than one-half of the lands in the District during 1988. The distribution system is scheduled to be substantially completed by December 1988.

The District's "up-front" cash contribution expenditures for legal, administration and engineering costs relative to acquisition of rights-of-way, design and construction management are a major factor in the timely scheduling of the construction work. In 1984, the District issued $26 million in general obligation bonds to fund its 20 percent share of the Project, estimated to cost $97.6 million. Over $15.5 million of these bond funds have been expended through February 1988.

The financial investment by the District and its landowners is much greater than the $26 million in District bonds. As landowners prepare for delivery of CAP water, substantial costs continue to be incurred for on-farm improvements in concrete-lined ditches and in laser-controlled land leveling in order to achieve water conservation.

It is crucial that construction of the District's distribution system Project remain on schedule to avoid financial problems which our landowners and the District would face if the District had to continue with pumping costs and begin repayment of the full bonded indebtedness before the system is completed and revenues are received from water deliveries to all District lands.

The District wishes to acknowledge the excellent cooperation we have received from the Bureau of Reclamation. Again, we thank the Subcommittee for its support to the CAP. With continued timely appropriations by Congress, supplemented by our bond money, we are confident that our distribution system can be completed on schedule.

STATEMENT OF CHARLES HUCKELBERRY, ASSISTANT COUNTY MANAGER, PIMA COUNTY, AZ

SUMMARY

1) RILLITO RIVER AND ASSOCIATED STREAMS PROJECT

Pima County asks the Committee to support the $290,000 in the Fiscal Year 1989 Corps of Engineers budget for preconstruction engineering and design for the Rillito River project;

2) RILLITO CREEK GROUNDWATER RECHARGE DEMONSTRATION PROJECT

Pima County asks the Committee to support the $206,000 in the Bureau of Reclamation's Fiscal Year 1989 budget under the Groundwater Recharge Demonstration Program for construction funding for the Rillito Creek Project.

3) TANQUE VERDE SMALL FLOOD CONTROL PROJECT

Pima County asks the Committee to place a high priority on the Tanque Verde project within the Corps of Engineer's 205 Small Flood Control Projects authority.

I am Charles Huckelberry, Assistant County Manager for Pima County and I am testifying here today on behalf of Pima County Department of Transportation and Flood Control District. I want to take the time to thank the Subcommittee for this

opportunity to present our priorities for Fiscal Year 1989, and at the same time to express our appreciation for your support of the County's projects in years past. The County has three Corps of Engineer's priority projects, namely; the Corps of Engineers' Rillito River Project, the Bureau of Reclamation's Rillito Creek Groundwater Recharge Demonstration Project and the Corps of Engineers' Tanque Verde Small Flood Control project, which we are requesting the Subcommittee's support for in its Energy and Water Development Appropriations Bill for FY 1989. The following outlines our requests.

Rillito River and Associated Streams Project

We are requesting the Subcommittee's support for the $290,000 in the FY 1989 Corps of Engineers' budget for preconstruction engineering and design for the Rillito River project. This flood damage prevention plan, which consists of soil cement bank protection and grade control structures will stabilize the streambanks thus preventing channel shifts of hundreds of feet and the severe flood-related damages which accompany it. The dramatic flash floods that plague our area have caused severe damages over the last several years. For example, floods of March and December 1978 and October 1983 caused extensive damages to structures and land along unprotected banks of the rivers, and to roads, bridges, utilities and existing bank protection. The 1983 event was the flood of record, both in terms of magnitude of flow and damages sustained. The U.S. Geological Survey estimated the 29,700 cubic feet per second flow at First Avenue as slightly less than a 50-year-frequency event. Total damages were estimated to have exceeded $10 million, all of which were directly attributable to streambed degradation and associated bank erosion and failure.

At the present time, the Chief's Report on this vital project is at the Secretary of the Army under review, and we expect approval shortly. Mr. Chairman, this is a priority project for the County. Our commitment to this project is evidenced by our willingness to share in the costs of the project in full accordance with Public Law 99-662, the Water Resources Development Act of 1986. This FY 1989 funding we are

supporting will enable the Corps to proceed with the necessary preconstruction work to keep the projection on schedule in anticipation of timely construction.

Rillito Creek Groundwater Recharge Demonstration Project

The second priority of the County, is the $206,000 in the Bureau of Reclamation's FY 1989 budget under the Groundwater Recharge Demonstration Program for construction funding for the Rillito Creek project. This project was one of the twelve selected for first-year construction funding under the Bureau's Groundwater Recharge Demonstration Program. This project was determined by the State to be its number one priority project for this demonstration program, and we are anxious to see it move forward. The project is the first of its kind to incorporate direct impoundment of stormwater runoff within an unregulated ephemeral stream system located in a region where groundwater is the primary source of public water supply. Because these streamflow and aquifer conditions are typical of the semiarid west, we believe the results of this study will provide rare insight into the potential for similar projects across the west. Groundwater recharge is an exciting opportunity for the State and potentially on element of the total groundwater picture we will be counting on as we work to meet the water supply needs of our future. This funding will allow construction to begin in accordance with the Bureau's schedule.

Tanque Verde Small Flood Control Project

The third and final priority of the County is to have the Committee place a high priority on the Tanque Verde project (near Forty Niner County Club Estates) within the Corps' Section 205 Small Flood Control Projects authority. As this project will be funded under the continuing authority of the Chief of Engineers for small flood control projects, we are requesting that the Committee support this project by asking the Chief of Engineers to proceed with construction of the project with funds contained in the Fiscal Year 1989 Continuing Authority for Small Flood Control Projects.

Damages to the area have been extensive in the past, in fact, far more dramatic than expected for the relatively frequent storm event, last experienced in 1983. Presently, the feasibility study is proceeding with Pima County shouldering its obligations by paying 50% of these study costs, again in accordance with P.L. 99-662. As there is a high probability that a storm event could devastate the area before project completion, we are requesting that the Subcommittee give serious consideration to our request.

These three items are priority issues for the County and we appreciate your efforts in considering our needs. We stand ready to answer any questions you may have on these projects.

STATEMENT OF THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

The Metropolitan Water District of Southern California supports appropriations for the Central Arizona Project of the Bureau of Reclamation as requested by the Governor of the State of Arizona. The Project, now moving towards completion of the reaches which will deliver water to the Tucson area, will be a landmark in the history of the State. Recent population estimates show that Arizona is undergoing the same population surge that other southwest states are experiencing and its infrastructure needs are mounting.

Many of the issues which have been under discussion among the various project interests are now being resolved in a spirit of cooperation that is unique in a project as complex and as far reaching as CAP. These discussions will permit further progress in construction and funding levels need to be maintained to keep the Project on schedule. Metropolitan recommends that your Committee give favorable consideration for fully funding the Central Arizona Project.

JOINT STATEMENT OF THE SEVEN COLORADO RIVER BASIN STATES

This statement is submitted on behalf of the seven Colorado River Basin states to stress the need for and importance of maintaining and improving federal capability in applied research in precipitation management, and the importance of this applied research to the Colorado River Basin. Precipitation management, more commonly referred to as weather modification, represents an as yet untapped, non-structural water augmentation tool of critical importance to water deficient regions. Its potential in water resources management for water short areas in the western United States, like the Colorado River Basin, has been well documented.

The advanced weather modification technology for snowpack enhancement evolved from federal and non-federal investments in theoretical studies, laboratory and field experiments, and controlled cloud seeding programs spanning about thirty years. Those investments have matured into an applied research expertise internationally recognized which resides within the Division of Atmospheric Resources Research of the Bureau of Reclamation.

Although Reclamation's focus is on managing water resources in western states, the Division of Atmospheric Resources Research has conducted research in various other parts of the nation and in some foreign countries. Its efforts are aimed at developing scientifically sound operational weather modification techniques for water production which have or are evolving at this time into domestic and international cooperative programs. The centralized federal management of this applied research has provided program continuity and economy.

The lack of federal funding in the President's proposed 1989 budget for the continued development of this applied research by the Division of Atmospheric Resources Research and for the transfer of this technology to operational programs is of great concern to all of the Colorado River Basin states. To abandon years of investment in the development of the technology and expertise which may represent the most or only feasible means for augmenting water supplies for water short areas at the beginning of an era for which the technology was targeted does not make sense.

With respect to the importance of weather modification research to the Colorado River Basin, the Congress, in approving the Colorado River Basin Project Act of 1968, P.L. 90-537, recognized that there was insufficient water in the Colorado River Basin to meet the long-term needs of the Basin states. In the 1968 Act, the Congress authorized studies of measures to augment the water supplies of the Colorado River and declared in Section 202 of the Act "... that the satisfaction of the requirements of the Mexican Water Treaty from the Colorado River constitutes a national obligation which shall be the first obligation of any future augmentation project ..." Section 202 goes on to state that the Treaty's requirements shall be met from the waters of

the Colorado River pursuant to existing treaties, laws and compacts until the national obligation is met by implementation of a 2.5 million acre-foot per year water augmentation project.

Augmentation of the Colorado River system by 2.5 million acre-feet in accordance with P.L. 90-537 would provide sufficient water to meet the 1.5 million acre-foot per year Mexican Water Treaty delivery requirement and the estimated 0.2 million acre-feet per year of associated losses and avoid future shortages in the Basin. Absent augmentation of the river, it is anticipated that the Basin water use will exceed the long-term average flow of the river in the 1990's and that shortages will have to be taken shortly after the turn of the century. Given the necessary lead times required to implement any of the identified means of augmenting the river, the Secretary of the Interior, pursuant to the 1968 Act, should now have in-place a well defined program for confirming the most feasible and appropriate means of augmenting the river by 2.5 million acre-feet per year. The absence of any defined program and discontinuance of funding for applied research for one of the most promising means of augmenting the river is most troublesome to the Basin states.

Over the years, four possible measures for augmenting the Colorado River have been identified: (1) desalting of sea water; (2) importation of Columbia River Basin water; (3) weather modification to increase runoff; and (4) vegetation management to increase runoff. Presently, the most promising means for augmenting the river are weather modification and vegetation management.

The Division of Atmospheric Resources Research has estimated, based on many years of theoretical studies, laboratory and field experiments, and controlled cloud seeding, that basinwide weather modification in the high mountainous watersheds of the Colorado River Basin could increase the river supply by an average of 1.5 to 2.0 million acre-feet of water per year. Similarly, it has been estimated that vegetation management could contribute an additional one million acre-feet of water per year to the river. Studies have also shown that the combined effects of vegetation management and weather modification within the same watershed would increase runoff more than if the two practices were applied separately.

The alpine and subalpine watersheds of the Rocky Mountains are major sources of water for the Colorado River system, and most of it occurs as snowmelt. Consequently, clouding seeding efforts in the Colorado River Basin have focused on snowpack enhancement. The Division of Atmospheric Resources Research has identified six major runoff producing areas in the Basin as candidates for snowpack increase through cloud seeding. Five of these areas encompass about 13,000 square miles in the Upper Basin and the sixth area about 9,600 square miles in the Lower Basin.

While much has been accomplished to demonstrate the effectiveness of cloud seeding technology as a means of increasing snowpack in the Colorado River Basin, much remains to be done to demonstrate the feasibility of a basinwide

program. Increases in snowpack must be confirmed and quantified, social and environmental impacts must be assessed, and techniques for risk reduction must be investigated.

The Bureau of Reclamation's Division of Atmospheric Resources Research is the appropriate entity to complete this work. The Division would also be the logical agency to implement and operate a basinwide cloud seeding program to accomplish the Secretary of the Interior's river augmentation responsibilities pursuant to the Colorado River Basin Project Act.

Besides the Colorado River Basin, the Division of Atmospheric Resources Research has been and is involved in cooperative programs in areas in other states. Collectively, the applied research programs complement rather than compete with each other. In recognition of the broad regional value of this applied research, the Western States Water Council in January 1988 adopted a resolution supporting a minimum annual level of funding for the Division of Atmospheric Resources Research of $3.7 million, and calling for weather modification to remain as one of the Bureau of Reclamation program priorities. Similar actions have been taken by the National Water Resources Association in November 1987 and the Colorado River Water Users Association in December 1987.

The Basin states believe an appropriate level of 1989 federal funding for the Atmospheric Water Resources Management Program of the Division of Atmospheric Resources Research to continue necessary research and the cooperative cost-shared programs is $4 million. The Basin states would like to reaffirm their strong support for the applied research to determine the feasibility of augmenting the Colorado River through a basinwide cloud seeding program. The Basin states urge Congress to provide $4 million in 1989 and appropriate funding thereafter for the Division of Atmospheric Resources Research for this purpose. The Basin states believe these activities are best addressed at the federal level since the technology is viewed as a national resource with potential widespread application. The Basin states also urge the Congress to assist in ensuring that high priority be given to delineating and implementing, in a timely manner, the most appropriate means of augmenting the Colorado River as mandated by the Colorado River Basin Project Act.

The Colorado River Basin states thank you for the opportunity to present their views on this very important issue of maintaining and improving federal capability in the field of weather modification.

ARIZONA FUTURE WATER NEEDS

Senator DECONCINI. Governor, thank you very much.

Last year, as you will recall, the Arizona delegation took on a mammoth effort to try to resolve environmental disputes over the Central Arizona Project. This resulted in the elimination of Cliff Dam, with some commitments to find other alternatives, et cetera.

At that time, at least for this Senator, we had a real lack of direction from the state of Arizona. It was difficult. We were working with members of the state legislature because of different political events there. Obviously, from your testimony, you are not only on top of this subject matter, but understand it very, very well. I know this Senator looks forward to working with the Governor's office in future water development problems that our state may face.

Governor, your testimony certainly paints a good picture that Arizona is moving on a steady course toward the goal of providing a stable supply of water with the quality that we know is necessary for the future of our state. With the completion of the Central Arizona Project Aqueduct down to Tucson, and conservation and ground water legislation that has already been enacted, can you give us your opinion on the state's water needs for the next 50 to 100 years?

Governor MOFFORD. Yes, I can. CAP will eliminate about two-thirds of the ground water overdraft in central Arizona, and that leaves a substantial amount of overdraft, but one that we believe we can manage. Through programs of conservation or use, and the augmentation of supplies in critical areas, which will be identified in the second management plan, I am confident that we have a reliable supply for the next 50 years and beyond that.

INDIAN WATER RIGHTS

Senator DECONCINI. Thank you, Governor.

Another issue that has been continuously brought before us is the formulation of negotiated settlements throughout the West, but certainly in Arizona, on Indian Water claims. As you know, the Congress is presently considering the Salt River Indian settlement, and if continued negotiations help us to bring the cost down, we might see passage of that bill early this year. This still leaves the Fort McDowell, the Gila River claims, and many others.

I wonder, Governor, I know that you support negotiated settlements in lieu of litigation, are you prepared and can you assist us in trying to bring about some settlements of these remaining claims with the various Indian tribes?

Governor MOFFORD. Yes; I view the state as having two possible roles. One, representing the state as a whole, and interests that are not at the negotiating table but who may be impacted; and, two, if appropriate, as a convenor or mediator of the negotiations.

Senator DECONCINI. I have no further questions, Governor. Thank you very much.

I yield to the Senator from Idaho.

CLIFF DAM SETTLEMENT, ALTERNATIVES, AND COSTS

Senator MCCLURE. Thank you very much, Mr. Chairman.

The Central Arizona Project is a very important project for the entire West, and I understand the importance to your state. I have been a supporter of the Central Arizona Project and I have been pleased to be able to assist from time to time, but I also note that there has been so much time pass that there have been other changes that have occurred that have caused modifications in the project from time to time, the most recent of which was the negotiation and the settlement that was embodied in that massive piece of legislation that we called the continuing resolution last fall.

I regret to say that I am not as well informed on some of the details of that settlement as perhaps I should be. I know Cliff Dam was a controversial portion of the Central Arizona Project and I am pleased to note that you, Mr. Chairman, and other members of the delegation, working with other people in Arizona, have been able to reach a compromise that we are now going to try to implement, but it does require some implementation, as I understand it.

Governor, perhaps you could explain to me how the Cliff Dam settlement will affect the cost-sharing agreement of the Central Arizona Project?

Governor MOFFORD. I would like to ask Mr. Linser to respond to that.

Mr. LINSER. Mr. Chairman and Senator McClure, if I may, on behalf of the Governor.

We have negotiated a supplement to the original agreement that recognizes the agreement between the congressional delegation and the environmental community that is embodied in the continuing resolution. We have taken the appropriate action to continue the cost-sharing agreement and it is still effective and operable.

Senator MCCLURE. Is it modified as a result?

Mr. LINSER. It is modified to recognize that Cliff Dam is no longer a part of plan 6.

Senator MCCLURE. Will it require further participation by the federal government with respect to the cost of CAP?

Mr. LINSER. Senator McClure, the participation would be with regard to the alternative water supply and flood control. The continuing resolution recognized that a feature of plan 6 would be an alternative water supply that could be secured at another location and brought in to replace the conservation storage that was in Cliff Dam up to 30,000 acre-feet.

Senator MCCLURE. Will that be under the same original cost-sharing proposal as was in the original legislation or will it require further legislation by the Congress?

Mr. LINSER. The conservation storage features of Cliff Dam were to be repaid by the beneficiaries; namely, the cities and the Salt River project. That continues to be the effect of the cost-sharing agreement.

Senator McCLURE. So you don't believe that it will require any change in the authorizing legislation?

Mr. LINSER. No, Senator McClure, I do not.

Senator McCLURE. Governor, on the Cliff Dam settlement, part of the change obviously will have some impact upon flood control that will affect the city of Phoenix. Do you have any estimate of the effect the loss of the flood control aspect of Cliff Dam will have on metropolitan Phoenix?

Governor MOFFORD. It is currently under study by the Corps of Engineers.

Senator McCLURE. You have no independent assessment of that effect?

Governor MOFFORD. No.

INDIAN WATER RIGHTS SETTLEMENT

Senator McCLURE. We also had within the very recent past an Indian water settlement in the Maricopa-Pima. Will that have an impact on CAP in 1989?

Mr. LINSER. Senator McClure, it will have no impact on the project itself. There is the provision in the Indian settlement proposal before Congress right now that some of the CAP water would be delivered to the Indians, but the impact on the project itself, no.

Senator McCLURE. Governor, you made some reference to the contributions by the state and entities within the state to the CAP. Does the State require legislative authority to issue bonds to pay for the state's allocation of CAP?

Governor MOFFORD. Mr. Britton will respond to that.

Mr. BRITTON. Mr. Chairman and Senator McClure, the authorities are vested in authorizing legislation which was adopted two sessions ago by the legislature. As a matter of fact, Mr. Rhodes was an instrumental part of that particular process.

Senator McCLURE. So it doesn't require any further legislation?

Mr. BRITTON. No.

Senator McCLURE. What kind of bonds would they be?

Mr. BRITTON. The state of Arizona does not have general obligation bonding authority. Some of the subdivisions, however, do. There is a suggestion, Mr. Chairman and Senator McClure, that you will see a mixture, but primarily revenue bonds.

FEDERAL RESERVE WATER RIGHT AND WATER ALLOCATIONS

Senator McCLURE. Governor, there is one other matter, and I know the chairman and I have had reason to discuss this in the Western Coalition, and with the Western Governors Conference, and it is a matter of great concern to me.

I was also in the House Interior Committee at the time other legislation was proposed and some approved. We have lately seen some changes by the administration in their approach to questions of Indian water rights and Indian settlements.

One of those is imbedded in the Animas-La Plata project in the state of Colorado in which the government is proposing that the Indians be granted a water right from federal reserve water rights, and that the Indians be given the right to lease or sell that water.

Governor, are you concerned about the impact that that kind of a settlement may have upon basin allocations?

Governor MOFFORD. In all Indian settlements, any type of controversy certainly should be considered. Having a short stay in this particular program, I will certainly work with Members of Congress or local legislators to see that these problems are solved.

Senator MCCLURE. Governor, I really hope that you will take a look at it, and take a very careful look at it, because I am really very much concerned that a whole list of questions that Senator Wallop has submitted to the administration have not been answered, and indeed may be unanswerable.

If, indeed, the water rights that are granted to Indians in Colorado are then sold, you could very well see a shift in the basin account. If there is anybody that ought to worry about that, it ought to be Arizona. You have a long history of political confrontation with California over the allocation of waters of the Colorado River. I remember that you won a law suit once, and then lost the political battle, or you would not have had CAP.

If you are again about to find somebody having made an end run on you to get some of the water out of the basin that will go to California rather than flow in the Colorado, you could end up as dry as southern Idaho. I mention that because I don't want you looking toward the Snake River or the Columbia River Basin for additional water supplies. [Laughter.]

Mr. LINSER. Senator McClure, I concur completely. We are extremely concerned with the allocation of the Colorado River and the impact that the Animas-La Plata project would have. The sale of the federal reserve water rights and the rights developed by that project, or the reserve rights that they have in Colorado should not be sold, particularly across basin boundaries. The law of the river is very clear, we think. We support legislation that would prohibit the sale of that water across the basin boundaries.

Senator MCCLURE. I am concerned, too, Mr. Chairman, although I will not take further time.

Governor, I am very much concerned that such arrangements authorized by federal projects may well circumvent some of the provisions of the 1902 Reclamation Act that require any waters appropriated pursuant to such authorization for a federal reclamation project be done pursuant to state law.

This is something that we have jealously protected. This has been something that we have had to fight for continuously, to maintain the right of the states to make their own determination of their own future with respect to the allocation of waters. If, through either the Indian Treaty window or through the sale of federal water or Indian waters,

we end up completely subverting state allocation authority, we will very greatly regret that I fear.

So, I would invite your attention to that, and really urge that you adopt that as a priority in the learning curve as you take on the new responsibilities of the Governor. Thank you very much.

Thank you, Mr. Chairman.

[NOTE: Subsequent to the hearing, the following material was submitted for inclusion in the record:]

LETTER FROM GOV. ROSE MOFFORD

April 28, 1988

The Honorable J. Bennett Johnston, Chairman
Subcommittee on Water and Energy Development
Committee of Appropriations
Senate Hart Office Building
2nd St. & Constitution Avenue
Washington, D.C. 20510

Dear Senator Johnston:

On April 12, 1988, I testified before the Senate Committee on Appropriations, Subcommittee on Energy and Water Development. My testimony focused on the need for appropriations to support several water development and related projects in Arizona. After my testimony, I was asked a number of questions by Senator McClure. Responses to those questions by myself and by my staff were brief. I am therefore asking that you enter this letter into the record as a supplement to the testimony that I submitted.

The question was asked whether or not the Cliff Dam settlement as embodied in the 1988 Energy and Water Development Appropriations Bill, affects the Plan 6 Cost-Sharing Agreement negotiated between the Federal Government and a number of Arizona entities. The answer is that the agreement in its original form was affected. Cost-sharing and up-front funding to support construction of Cliff Dam was an integral part of the agreement. The cities in the metropolitan area agreed to pay for that portion of the cost of Cliff Dam which was allocated to the purpose of water conservation and the Flood Control District of Maricopa County had agreed to pay 20 percent of the cost allocated to flood control. Additionally, the Salt River Project had agreed to up-front fund 15 percent of the cost allocated to Safety of Dams. The Cities, in return, were to receive the new water supply developed by Ciff Dam. Without the dam, neither the Cities, the Flood Control District nor the Salt River Project were willing to contribute funds toward a dam that was not going to be constructed.

All parties recognized that the agreement must be amended if it were to continue to be operable. They went back to the negotiating table and supplemented the original agreement to recognize the provisions contained in the Appropriation Bill. Included in the supplement is the recognition that the Secretary of the Interior must search for a water supply to replace that which would have been developed behind Cliff Dam, up to a maximum of 30,000 acre-feet per year.

Local funds contributed by the Cities for Cliff Dam are now in a special escrow account which may be used for the replacement water supply. Funds contributed by the Salt River Project are now placed in a special escrow account which may be used for safety of dams work on the Verde River dams.

The supplemental agreement became effective July 1, 1987. Therefore, we continue to have an operable cost-sharing and up-front funding arrangement between the local entities and the Federal Government.

Regarding the question of whether the proposed Salt River Pima Maricopa Indian Community water settlement impacted the Central Arizona Project, the answer is no. The Central Arizona Project and water deliveries from the project are a part of the settlement but there is no impact on project facilities. The aqueduct will be used to convey some water from the Colorado River to cities which are party to the agreement. However, this is not project water. Rather, it is water

secured pursuant to the agreement by purchase of water rights on the Colorado River. The details of transportation of this water through the project's facilities needs to be worked out but transportation should not affect deliveries of water to the other project users. Secondly, Central Arizona Project water, currently under contract to the Indians, will be leased to the City of Phoenix. This water will be delivered pursuant to the existing contract between the Indian community and the Secretary of the Interior. Therefore, we foresee no impact on other project users in this regard.

On the matter of impact to flood control with the loss of Cliff Dam, there is a significant change in the expected flood flows through the Phoenix Metropolitan Area. With Cliff Dam, the 100 year flood at the Phoenix Airport would have been 55,000 cfs.

Without Cliff Dam, a flow of 170,000 cfs is expected for a similar frequency flood event. Studies are necessary to determine the potential for developing flood control at existing Horseshoe and Bartlett Dams, as a part of Plan 6. My testimony asked that $500,000 be appropriated to fund these studies.

I was asked whether the State would require legislatative authority to issue bonds to pay for the State's allocation of Central Arizona Project and what kind of bonds would be issued. The responsibility rests with the three county Central Arizona Water Conservation District does not have authority to issue bonds for project repayment. However, the district does not see a need to borrow money for that purpose. The district does have authority to issue bonds for the purpose of up-front funding facilities pursuant to the Plan 6 Cost-Sharing Agreement. The extent to which the district will issue bonds remains unknown at this time and will depend on a number of factors affecting revenues to the district.

Regarding the Animas La Plata project and the Ute Indian Settlement, the State of Arizona shares Senator McClure's concerns regarding the sale of water by the Indian community across state lines. This position is expressed in testimony presented the Select Committee on Indian Affairs by the States of California, Nevada and Arizona.

I appreciate your consideration of this supplement to my testimony.

Sincerely,

Rose Mofford

ROSE MOFFORD
Governor

INTRODUCTION OF HON. JACK WILLIAMS, FORMER GOVERNOR OF ARIZONA

Senator DECONCINI. I do want the record to show that we are very pleased to have another outstanding former Governor of Arizona with us today, who testified here for a number of years and carried the water, so to speak, for the state of Arizona. Governor Jack Williams is with us.

Governor Williams, thank you very much for your continued leadership.

I now yield to my good friend John McCain for any questions he may have for the Governor.

Senator MCCAIN. I have no questions. Thank you, Mr. Chairman.

I thank not only the Governor, but her obviously very knowledgeable staff who are here with her.

Thank you, Governor.

Thank you, Mr. Chairman.

Senator DECONCINI. Congressman Rhodes?

Mr. RHODES. Mr. Chairman, I have no specific questions for the Governor, but if you might indulge me, I think I would like to respond very briefly to the last point that Senator McClure brought up concerning the Animas-La Plata settlement.

We are very concerned about that and it puts us in a somewhat of a ticklish situation because we also very definitely support local settlement of these claims rather than litigation. The interbasin transfer provision that is contained in there is more than a great concern. It is something that will prevent the Arizona delegation from being able to support that settlement agreement, something that we made very clear, I think, in the House Interior Committee hearings.

I think that it is something that should be of as much concern to the upper basin states as it is to the lower basin states. As dry as southern Idaho is, we don't want you to get any dryer and start looking to the Colorado for your relief. So we have the same concern, and I wanted to reassure you of that.

Thank you, Mr. Chairman.

Senator DECONCINI. Does the Senator from Nevada have any questions or opening statement?

Senator REID. Mr. Chairman, I have no questions, other than to remind my good friends from the other states that the first Bureau of Reclamation project that took place any place in the United States was in Nevada, the first ever.

Senator DECONCINI. We will never forget that. [Laughter.]

Governor, thank you very much for your testimony. We appreciate your being here.

Gentlemen, thank you for being with us.

Governor MOFFORD. We thank you Senator for hearing us.

ADDITIONAL STATEMENTS FOR THE RECORD

Senator DECONCINI. I have two other statements which I would like to make part of the hearing record: one from the Colorado River Basin Salinity Control Forum, and the second from Gila River Indian Community.

Without objection, these will go in the record at this point.

[The statements follow:]

STATEMENT OF THE COLORADO RIVER BASIN SALINITY CONTROL FORUM

For the Department of the Interior

Bureau of Reclamation - FY 89 Appropriation

Colorado River Basin Salinity Control Forum's Recommendation:

Construction	$22,050,000
Advance Planning	800,000
Plan Formulation	1,200,000
TOTAL	$24,050,000

In addition--
Construction on Lower Gunnison Basin Unit $ 250,000 (FY 88)

RECENT BACKGROUND
Detailed Fund Allocation

In 1984 the Congress acted to revise the Salinity Control Act and to establish a policy increasing the Basin states' cost-share to 30 percent of newly authorized salinity control works. This increase has made the Basin states even more attentive to need and cost-effectiveness of the various components of the Colorado River Basin Salinity Control Program.

After significant efforts to coordinate the views of many federal agencies and the seven Basin states, the Colorado River Basin Salinity Control Forum finalized the triennial report required under the Clean Water Act. That document, entitled the 1987 Review, Water Quality Standards for Salinity, Colorado River System, establishes a plan for salinity control in the Colorado River Basin that is in agreement with federal agencies' findings as to needs and recommended programs. These programs are required to maintain state-adopted and EPA-approved water quality standards for the River.

In October 1987, the Colorado River Basin Salinity Control Forum concluded that to implement the needed and necessary program identified in that report, the Bureau of Reclamation would require a total appropriation of $24,050,000 in FY 89. The President has requested only $16,548,000. The Basin states have re-examined all of the features needed to control the salinity in the Colorado River and concluded that the President's budget is not adequate to ensure that further pollution and degradation of the water qualities of the Colorado River do not occur.

Specifically, the Basin states urge that $1,200,000 be appropriated for plan formulation for the Lower and Upper Colorado River Regions of the Bureau of Reclamation. The Basin states also believe it essential that $800,000 be appropriated for advance planning.

With respect to construction, the Basin states urge the appropriation of $9,000,000 for continuation of canal and lateral lining in the Grand Valley of Colorado; the appropriation of $8,000,000 for the continuation of the construction of facilities to dispose of salt brines in the Paradox Valley of Colorado; the appropriation of $50,000 to monitor the Las Vegas Wash area of Nevada; and the appropriation of $5,000,000 for construction in the Lower Gunnison area of Colorado so that winter water can be placed in pipelines. This latter appropriation would allow construction to begin on one of the most cost-effective salinity control features now available in the Bureau of Reclamation Colorado River Basin Salinity Control Program.

The Forum has asked that $250,000 be made available in this fiscal year (FY 88) for advance planning on the Lower Gunnison effort. We are continuing to work for transfer of funds from other salinity control units to this most cost-effective one. With our heavy cost-sharing, we strongly object to a federal appropriation and construction schedule that does not place money where the most salt could be removed for the least cost.

Failure to appropriate the above-identified funds for FY 89 will result in a greatly increased probability that water quality standards will be violated in the Colorado River in the years ahead. It will also mean that in the future when an adequate program is ultimately constructed and paid for, the costs will be significantly higher than they would be if the above funds were now made available.

JUSTIFICATION

The waters of the Colorado River system serve some 18 million people and irrigate approximately 1.6 million acres in the seven Colorado River Basin states. The river also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the river. Water users in the lower reaches of the river system have suffered significant adverse impacts due to the river's salinity. These impacts have been estimated to be in excess of $200 million a year. Without salinity control measures and with increased demands for Colorado River water in the Basin, the river's salinity is projected double by the turn of the century, with concomitant increases in salinity damages.

The Basin states concern with the river's increasing salinity led to the creation of the Colorado River Basin Salinity Control Forum in 1973. The Forum, whose members are appointed by the governors of the respective states, developed a salinity control policy that called for maintaining salinity concentrations at or below those levels found in the lower river in 1972, while the Basin states continue to develop their compact-apportioned waters. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

After discussions between the federal government, the Republic of Mexico and the seven Colorado River Basin States, the Congress enacted in 1974 the Forum-sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act established a program to reduce the concentration of salts in the Colorado River below Imperial Dam (the last diversion point in the United States) for waters being delivered to Mexico. Title I was identified by Congress as a federal commitment. The Act also established a program, Title II, which allowed the states and the federal government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefitting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of gubernatorial representatives of the Basin states to advise the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort.

In 1984, Congress enacted much-needed amendments to the 1974 Act that were advanced by the Forum. The amendments (Public Law 98-569) authorized additional activities for the Departments of the Interior and Agriculture that were needed in order to meet the objectives of the Act. Previously the Congress had required the Basin states to, over a period of time, reimburse the Bureau of

Reclamation expenditures in the amount of 25 percent of the total construction costs. The 1984 amendments by Congress required that for newly authorized construction, the Basin states must pay 30 percent of the construction costs upon expenditure, or over a period of time with interest.

Since the enactment of the 1984 amendments, the Basin states and all of the involved agencies of the federal government have worked diligently to formulate a program that would minimize the cost of controlling the salinity of the Colorado River. These combined study efforts have shown that the salinity of the river can now be controlled with a funding level significantly less than that initially identified.

The above findings have been published in the 1987 Joint Evaluation of Salinity Control Programs in the Colorado River Basin. This report, which was prepared jointly by all of the federal agencies involved in the salinity control effort, provides the best information available, at this point in time, to justify our requested level of appropriation. Unfortunately, the President's recommended appropriation does not satisfy the funding needs identified in this report.

The Advisory Council made specific recommendations in its February 1988 Annual Report relative to the FY 89 funding for the Salinity Control Program. The Colorado River Basin Salinity Control Forum supports the recommendations of the Advisory Council. The appropriation felt necessary by the Advisory Council and the Salinity Control Forum with respect to the Bureau of Reclamation's budget for salinity control features for construction, advance planning, and plan formulation has been identified at the beginning of this statement.

We, therefore, urge that the Senate Committee on Appropriations, Subcommittee on Energy and Water Development, recommend $24,050,000 to be appropriated. We feel it is important to note that any further cuts in these appropriations would delay implementation of the Salinity Control Program, resulting in further salt pollution of the river and significant future damage to the users of the Colorado River in the United States and Mexico. Catch-up funding attempts in future fiscal years will result in a program that will ultimately cost much more.

STATEMENT OF THE GILA RIVER INDIAN COMMUNITY, ARIZONA

Mr. Chairman, members of this Sub-committee, and staff members, I appreciate the opportunity to enter this testimony of the Gila River Indian Community, Arizona, in support of the appropriation request to enable the Army Corps of Engineers to conduct a reconnaissance study as the first phase of a comprehensive water resources study.

We wish to bring to the Sub-committee's attention Section 905(c) of the Water Resources Development Act of 1986 which states that "the Secretary is authorized to consider benefits which may accrue to Indian tribes as a result of" feasibility studies of water resources problems.

The Gila River Indian Reservation is subject to combined flood events originating locally and in basins draining from Mexico, New Mexico, and eastern Arizona. Two major watercourses, the Gila River and the Santa Cruz River, cut through Tribal lands before merging with the Salt River at the western end of the Reservation. A secondary stream, Queen Creek, produces severe local flooding before merging with the Gila River at the Reservation's midpoint.

Flooding from the Gila River and its tributaries is a continuous threat to the Gila River Indian Community's people and to natural resources on our 374,000 acre Reservation. The Gila River's channel traverses 65 miles through the Reservation. Siltation of the Gila's channel has caused the river's flood plain to widen. Flood events consequently are more severe, and their location is unpredictable because of the year to year changes in the floodplain. Communities, agricultural lands, and natural resources have suffered major damage in recent years. Possible river management options must be identified to control these damaging floods.

Stormwater management, also, is a critical water resources problem. More than 18 miles of the Reservation's northern boundary abuts rapidly urbanizing areas of the cities of Phoenix and Chandler.

Drainage patterns have been altered by this off-Reservation urban development. This affects the severity and frequency of flooding on approximately 88,000 acres of Tribal land which we are master planning for regional scale recreation, commercial, and industrial development. Portions of this acreage are also being planned for agricultural development using irrigation water delivered from the Central Arizona Project.

Existing development in this area has already suffered loss from stormwater flooding. Recent flooding in the Tribe's industrial park--which is the largest industrial park in central Arizona--has caused the land's appraised value to be cut by one-third.

Controlling stormwater sheet flow over a nearly level landscape with no defined drainage outlets requires a comprehensive, coordinated solution. A remedy to stormwater flooding must be found so that the Tribe can proceed with economic development projects, and protect the continued use of existing revenue-producing developments.

Moreover, flood control and stormwater management offer an opportunity to augment our limited desert water supplies by using these water sources for groundwater recharge and to improve groundwater quality.

The Gila River Indian Community is willing to consider cost sharing of any projects which may result from a reconnaissance study. However, flood control, stormwater management, and other water resources problems affecting our land and people are regional in scale. Solutions to these problems are beyond our resources. We therefore request approval of an FY 1989 appropriation in the amount of $500,000 for the Army Corps of Engineers to perform a reconnaissance study of water resources problems on the Gila River Indian Reservation.

Thank you.

MISSOURI WATER RESOURCE PROJECTS

STATEMENT OF HON. JOHN DANFORTH, U.S. SENATOR FROM MISSOURI ACCOMPANIED BY LEE McKINNEY OF McKINNEY ASSOCIATES

Senator DECONCINI. Senator Danforth, do you have a statement that you want to make?

Senator DANFORTH. Yes, Mr. Chairman, and thank you very much.

Senator DECONCINI. We will insert you at this time.

Senator DANFORTH. Mr. Chairman, thank you very much. I am sorry I wasn't here earlier when Senator Bond was here.

Senator DECONCINI. May we please have quiet so the witnesses can be heard. Thank you.

Senator DANFORTH. I have with me Mr. Lee McKinney who is an expert on the St. Louis Harbor project matter that is before us.

RIVER DES PERES FLOOD CONTROL PROJECT, MISSOURI

I know, Mr. Chairman, that Senator Bond has testified both on behalf of River Des Peres and the St. Louis Harbor projects.

I had the opportunity a few weeks ago to go out and inspect the situation at the River Des Peres and to talk to people who were affected by it. The River Des Peres meanders through St. Louis and St. Louis County. It literally touches the lives of thousands of people, 42 different municipalities in St. Louis and St. Louis County.

It is given to flooding on a very regular basis. Every couple of years it gets out of its banks and causes tremendous property damage and personal troubles for people who live in the area. Time is of the essence in getting this project underway, which is the reason for our appearance.

ST. LOUIS HARBOR, MO.

With respect to the St. Louis Harbor project, the Mississippi River is a very key part of the economy in the St. Louis area. This is a project which has received appropriations for the last 2 years. We are seeking another $300,000 for that.

Mr. Kinney knows all of the answers.

Senator DECONCINI. I understand that.

Mr. McKinney, we are glad to have you here.

I have no questions, Senator. Senator Bond was here and reviewed this problem. We realize the importance of these projects, and that you have testified before. This committee has budget restraints as you know so well, but we will give careful consideration to your request.

Senator DANFORTH. Thank you very much.

PREPARED STATEMENTS

We will put your full statements in the record, along with a statement from the Conservation Federation of Missouri, which addresses the Birds Point-New Madrid Floodway project.

[The statements follow:]

STATEMENT OF SENATOR DANFORTH

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE. THANK YOU FOR PROVIDING ME THE OPPORTUNITY TO TESTIFY IN SUPPORT OF MISSOURI'S FLOOD CONTROL AND WATER DEVELOPMENT PROJECTS. I STRONGLY SUPPORT THE BUDGET REQUEST SUBMITTED BY THE PRESIDENT, BUT I WOULD ALSO LIKE TO EXPRESS MY SUPPORT FOR TWO PARTICULARLY IMPORTANT PROJECTS IN THE ST. LOUIS AREA.

(1) RIVER DES PERES FLOOD CONTROL PROJECT. THE RIVER DES PERES WATERSHED HAS AN AREA OF 11 SQUARE MILES AND INCLUDES ALL OR PART OF 42 MUNICIPALITIES WITHIN ST. LOUIS COUNTY PLUS THE CITY OF ST. LOUIS, MISSOURI. THE WATERSHED HAS A 1980 CENSUS ESTIMATED POPULATION OF 415,000 AND OVER 3,100 STRUCTURES IN ITS 100-YEAR FLOOD PLAIN

FLASH FLOODING AND STREAMBANK EROSION HAVE BEEN MAJOR PROBLEMS THROUGHOUT THE RIVER DES PERES WATERSHED SINCE THE 1950S. LAST MONTH I VISITED THE RIVER DES PERES AREA AND PERSONALLY SAW THE TERRIBLE EROSION AND OTHER DAMAGE THAT HAS BEEN CAUSED BY FLOODING IN THIS AREA. THE CORPS OF ENGINEERS HAS RECOMMENDED A PLAN TO ADDRESS THESE PROBLEMS THROUGH CHANNEL WIDENING AND BANK STABILIZATION. THIS PROPOSAL IS CURRENTLY WORKING ITS WAY THROUGH CORPS CHANNELS FOR APPROVAL BY THE ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS.

THE PROJECT HAS A VERY HIGH BENEFIT-TO-COST RATIO OF 1.6, WHICH MEANS THAT EACH DOLLAR INVESTED WILL RETURN $1.60 IN BENEFITS FROM FLOOD DAMAGE PREVENTION. THE PROJECT ALSO HAS WIDESPREAD PUBLIC SUPPORT IN ST. LOUIS, AND A SOLID COST SHARING COMMITMENT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT.

THE ASSISTANT SECRETARY COULD GIVE HIS APPROVAL TO THIS PROJECT AS EARLY AS JULY 1988. CONSEQUENTLY, SENATOR BOND AND I

URGE THE SUBCOMMITTEE TO CONSIDER AN APPROPRIATION OF $500,000 FOR CONTINUED PLANNING AND ENGINEERING, TO BE MADE AVAILABLE AS SOON AS THE ASSISTANT SECRETARY GIVES FINAL APPROVAL TO THE PROJECT.

(2) ST. LOUIS HARBOR PROJECT (MISSOURI & ILLINOIS). THIS IMPORTANT PROJECT WAS AUTHORIZED IN THE WATER RESOURCES AND DEVELOPMENT ACT OF 1986 (P.L. 99-662). CONGRESS APPROPRIATED FUNDS IN FY 1985 ($600,000) AND FY 1986 ($425,000).

THE ST. LOUIS HARBOR PROJECT WOULD ADDRESS TWO PROBLEMS THAT MUST BE CORRECTED TO KEEP THE ST. LOUIS HARBOR ECONOMICALLY VIABLE. THE CORPS OF ENGINEERS' PLAN CALLS FOR IMPROVEMENTS TO REDUCE SILTATION IN THE HARBOR ON THE MISSOURI SIDE, AND THE PROVISION OF ADDITIONAL DOCKING FACILITIES ON THE ILLINOIS SIDE.

MR. LEE MCKINNEY, A FORMER DISTRICT ENGINEER FOR THE ST. LOUIS DISTRICT OF THE CORPS OF ENGINEERS, IS HERE THIS MORNING TO TESTIFY ON THE SPECIFIC MERITS OF THE ST. LOUIS HARBOR PROJECT. I URGE THE SUBCOMMITTEE TO GIVE CAREFUL CONSIDERATION TO MR. MCKINNEY'S COMMENTS AS HE IS AN EXTREMEMLY KNOWLEDGEABLE ENGINEER.

SENATOR BOND AND I RESPECTFULLY REQUEST THAT THE SUBCOMMITTEE CONSIDER PROVIDING $300,000 FOR THE ST. LOUIS HARBOR PROJECT IN FISCAL YEAR 1989 SO THAT WORK ON THIS IMPORTANT PROJECT MAY RESUME.

I RECOGNIZE THAT THE SUBCOMMITTEE MUST MAKE MANY DIFFICULT DECISIONS IN DETERMINING HOW TO ALLOCATE LIMITED RESOURCES. SENATOR BOND AND I APPRECIATE YOUR TIME AND YOUR CONSIDERATION OF THE PARTICULAR CONCERNS THAT WE HAVE RAISED THIS MORNING.

THIS CONCLUDES MY TESTIMONY. THANK YOU, MR. CHAIRMAN.

STATEMENT OF LEON E. MCKINNEY, MCKINNEY ASSOCIATES

There has been a federal interest,with strong local and state support,in solving St. Louis Harbor problems for almost 24 years. This interest dates back to June 1964,when the House Public Works Committee adopted a resolution concerning harbor sedimentation. This interest was broadened in May 1971,when the Senate Committee on Public Works instructed the Corps to review pertinent studies to determine the advisability of providing improved commercial harbor facilities in the vicinity of St. Louis.

A resulting report was prepared,rigorously reviewed in Corps channels,and submitted by the Chief of Engineers to the Secretary of the Army,on April 30,1984,favorably concurring with the findings of the Board of Engineers for Rivers and Harbors. The Congress then authorized the project in the Water Resources Development Act of 1986 (P.L. 99-662). Funds were appropriated by the Congress and enacted into law by the President in FY 1985($600,000) and FY 1986($425,000). Simply put,the project was intended to address two problems,which if not corrected,will stymie badly needed opportunities to create new jobs. The recommended improvements would reduce siltation in the Harbor on the Missouri side and provide additional docking facilities on the Illinois side,by excavating The Chain of Rocks Canal bank back 210 feet for a length of 6900 feet.

Then,on May 6,1986 the Assistant Secretary of the Army(Civil Works) stated in a memorandum that Federal participation in inland waterway harbor improvements is not warranted when

> "(1)resale or lease of lands used for disposal of excavated channel material can recover the cost of the improvements or(2)the acquisition of land outside the navigation servitude is necessary for construction of the improvements and would permit local interests to control access to the project".

Next,an Engineer Circular,EC-1165-2-139,was issued to implement the above stated policy. The Circular discussed the use of excavated materials to create flood-free land,which then could be used for industrial development.Finally,on May 22,1987,the Assistant Secretary,in a letter transmitting the Report on St.Louis Harbor,said that the project would create an additional 1,080 acres of flood-free waterfront land along the Chain of Rocks Canal,and recommends no Federal participation.

All of this appears to mean that the Army has changed its previous policies and position,so that navigation projects which use excavated materials to create flood-free lands no longer warrant a Federal interest,as they did in the past.Secondly,it seems that the Army is now saying that it will maintain the authorized navigation channel,but it will be up to the owner-operator of the shoreside docking facilities to provide access to the channel.

The matter of creating flood-free lands with excavated materials is very simply not applicable in the case of St.Louis Harbor, period. The lands to become available for industrial development are already flood-free. Furthermore,on the Illinois side,the 1,080 acres of land to become available for development are mostly owned by the Army.

As to the change in policy concerning providing access to the channel, in the case of St. Louis Harbor,this ignores the fact that the work performed by the Corps over the last 100 years on the Missouri and Upper Mississippi Rivers may well be a major contributor to the

siltation problems. Too,why spend Federal funds to construct and maintain navigation channels,if the end users cannot move boats and barges to and from essential shoreside facilities?

Finally,because of their logical expectations that the Army,if funded by the Congress,would provide the improvements recommended by the Army,and authorized by the Congress,local interests in Missouri and Illinois have worked to provide improvements to dovetail with the expected Federal improvements.This involves considerable man hours of planning and engineering,as well as sizable amounts of funds (e.g.,Missouri has set aside $1,200,000 for the project).

In summary,we respectfully request that this Committee recognize the fact that this project was previously supported by the current Administration(reqested funding for FY 1986),as well as other projects of this nature;the flood-free lands creation objection does not apply to St. Louis Harbor;the responsibility of the siltation problem is not clear,but its solution is essential at any rate;significant prior committments of time and funds from state and local sources by local sponsors acting in good faith(this was recognized by the Assistant Secretary in the case of the Southeast Regional Port Project,which was allowed to proceed);and finally,these improvements were recognized in the Corps Report as being economically sound and will return significant national and regional economic benefits.

We request that the Committee consider providing $500,000 for the St. Louis Harbor Project in Fiscal Year 1989,so that work may resume. Thank you for allowing us the time to appear here today.

STATEMENT OF THE CONSERVATION FEDERATION OF MISSOURI

The Conservation Federation of Missouri is the state's largest citizens conservation organization with over 40,000 members.

We strongly support the efforts that have been made to fund a reconnaissance study of alternatives to the use of the Birds Point-New Madrid Floodway.

We understand that you will conduct hearings of your Sub-Committee on Energy and Water Development beginning April 7 and that this is an appropriate time to request the appropriation. We offer the full support of our organization for the $500,000 which the Corps of Engineers estimates they will need out of the 1989 Mississippi River and Tributaries Project funds to get the study started.

We understand the study has the support of Congressman Bill Emerson and that last year a resolution was adopted authorizing the study but that it passed too late in the session.

An thorough study of all possible alternatives is the fairest approach for all parties involved in the Birds Point-New Madrid Floodway.

TEXAS WATER RESOURCE DEVELOPMENT PROJECTS

STATEMENT OF HON. JACK BROOKS, U.S. REPRESENTATIVE FROM TEXAS

Senator DECONCINI. Congressman Brooks, we are prepared to take the Texas water projects now. If you would like to be seated now, you may proceed.

Mr. BROOKS. Mr. Chairman, I want to thank you for the opportunity to appear today and urge the subcommittee's favorable consideration of the public works projects for the Ninth Congressional District of Texas included in the fiscal year 1989 budget.

Mr. Chairman, I support funding all of the items included in the budget proposal and, in the interest of time, I will submit a list of them with my statement rather than discuss each one of them individually.

I am particularly pleased that the Taylor's Bayou drainage and flood control project in Jefferson County and the Clear Creek flood control project, affecting both Galveston and Harris Counties, continue to be funded in the President's budget for construction for $4.4 million and $4.3 million respectively. I would appreciate your serious consideration of retaining these projects at those levels in your appropriation bill.

WALLISVILLE LAKE, TEX.

In the continuing matter of Wallisville Lake, you will recall this to be a salt water barrier, recreation, and water supply project located at the mouth of the Trinity River in Chambers and Liberty Counties.

The 5th Circuit Court of Appeals released the Wallisville project from a 14-year old environmental injunction last May. The Corps of Engineers expressed a capability of $4 million for the project at that time. The Corps has also completed design and is ready to initiate construction, but the Corps, however, has now been ordered to withdraw its expressed capability.

Congress did appropriate $500,000 for fiscal year 1988 for construction but OMB has refused to release these funds to the Corps of Engineers. The purpose of my testimony at this time is to urge your support for funding the original $4 million capability originally expressed genuinely and honestly by the Corps, and, hopefully, including language directing the Corps to begin that construction and to spend that money in accordance with their original capability and with congressional intent.

The local sponsors of the project—the city of Houston, Chambers-Liberty Counties Navigation District, and the Trinity River Authority—believe the federal government should honor the commitments agreed to in 1967 when a local assurance contract was signed with them. I tend to agree with them.

This subcommittee has been most supportive and extremely patient over the years with reference to Wallisville Lake for which I am deeply grateful. It is extremely disturbing to me that the administration would withdraw its support contrary to congressional intent just when the project is at last ready to go forward and we can finish it up. Any recommendation or assistance that your subcommittee in your wisdom could provide would be deeply appreciated.

Again, I want to say that I appreciate your kind consideration of all the federal public works projects that are so critical to the economic development of my district, with its many troubled petrochemical plants and heavy industry operations so vital to our country.

Ports on the Texas Gulf Coast are an integral part of the economy of our nation. The projects ensure the productivity and growth of that area, help to remove the ever present threat of flooding with its tragic effects, and have the additional benefit of trying to improve the difficult unemployment situation we have right there now. In January it was 12 percent in Port Arthur, and the overall statistical metropolitan area was about 9-plus in December. That is a lot of people.

INTRODUCTION OF SUPPORTING WITNESSES

I have with me today a number of persons vitally concerned with these projects. They are here to support the statements which we are submitting and to answer any questions you might have. I would like to introduce them, with your permission.

From the city of Beaumont, Mayor Maury Meyers, Larry Beaulieu, Dr. Billy Franklin, Charles Glass, Tanner Hunt, who used to work right here in Washington for me, Ken Ruddy, and Jim Stokes. From the city of Friendswood, Councilman Robert Wicklander. From the city of Groves, Brad Corley of the Chamber of Commerce. From the city of League City, Mayor Joe Lamb, City Administrator Paul Nutting, City Engineer Jess Hegemier, Councilmen Chester Davis, Ted Moss, and Ed Poole.

From Galveston County, Commissioners Ron Crowder and Billy Jack Pegues. From Jefferson County, we have Judge Richard P. LeBlanc and his wife Cheryl; and Commissioner Norman Troy, who is my own com-

missioner from where I live in that county. From the Port of Beaumont, William R. Kimbrough, president of the board of commissioners, and Richard Busby from the Chambers-Liberty Navigation District. From Jefferson County Drainage District No. 6, President Sam Smith and his daughter Sandra; Vice President and Secretary Robert Horn and Mrs. Barbara Horn; Commissioner Josh Allen and Ms. Deanne Henslee; and Commissioner Robert Rodgers. From Jefferson County Drainage District No. 7, long-time Chairman Eugene Rasheta, Manager Tom Hogan, Commissioners M.J. Duffy Adair, Julian Coghill and Mrs. Coghill, Joe Lyday and Mrs. Lyday, and David Provost and Mrs. Provost. David Provost is one of those lawyers who made so much money if we don't find it, I am going to get him to.

I also submit for the consideration of the subcommittee statements in support of these projects from the following: the cities of Beaumont, Friendswood, Groves, Nederland, Fort Arthur, and Texas City; the counties of Galveston and Jefferson; the ports of Galveston and Port Arthur; Beaumont Navigation District, Clear Creek Drainage District, Harris County Flood Control District; Guy Jackson from Chambers County; Jefferson County Drainage Districts No. 3, 6, and 7.

I want to thank you very much. If you have any questions, I will try to answer them.

[The statements follow:]

STATEMENT OF CONGRESSMAN JACK BROOKS OF TEXAS

MR. CHAIRMAN, THANK YOU FOR THIS OPPORTUNITY TO APPEAR TODAY TO URGE THE SUBCOMMITTEE'S FAVORABLE CONSIDERATION OF THE PUBLIC WORKS PROJECTS FOR THE NINTH CONGRESSIONAL DISTRICT OF TEXAS INCLUDED IN THE FISCAL YEAR 1989 BUDGET.

MR. CHAIRMAN, I SUPPORT FUNDING ALL OF THE ITEMS INCLUDED IN THE BUDGET PROPOSAL AND IN THE INTEREST OF TIME WILL SUBMIT A LIST OF THEM WITH MY STATEMENT RATHER THAN DISCUSS EACH ONE INDIVIDUALLY.

AGAIN THIS YEAR, I AM PARTICULARLY PLEASED THAT THE TAYLOR'S BAYOU DRAINAGE AND FLOOD CONTROL PROJECT IN JEFFERSON COUNTY AND THE CLEAR CREEK FLOOD CONTROL PROJECT AFFECTING BOTH GALVESTON AND HARRIS COUNTIES CONTINUE TO BE FUNDED IN THE PRESIDENT'S BUDGET FOR CONSTRUCTION FOR $4.4 MILLION AND $4.3 MILLION RESPECTIVELY. I WOULD APPRECIATE YOUR SERIOUS CONSIDERATION OF RETAINING THESE PROJECTS AT THOSE LEVELS IN YOUR APPROPRIATIONS BILL.

MR. CHAIRMAN, IN THE CONTINUING MATTER OF WALLISVILLE LAKE, YOU WILL RECALL THIS TO BE A SALTWATER BARRIER, RECREATION AND WATER SUPPLY PROJECT LOCATED AT THE MOUTH OF THE TRINITY RIVER IN CHAMBERS AND LIBERTY COUNTIES. THE 5TH CIRCUIT COURT OF APPEALS RELEASED WALLISVILLE FROM A 14 YEAR-OLD ENVIRONMENTAL INJUNCTION LAST MAY. THE CORPS OF ENGINEERS EXPRESSED A CAPABILITY OF $4 MILLION FOR THE PROJECT AT THAT TIME. THE CORPS HAS ALSO COMPLETED DESIGN AND IS READY TO INITIATE CONSTRUCTION. THE CORPS, HOWEVER, HAS NOW BEEN ORDERED TO WITHDRAW ITS EXPRESSED CAPABILITY.

CONGRESS DID APPROPRIATE $500,000 FOR FY 1988 FOR CONSTRUCTION BUT OMB HAS REFUSED TO RELEASE THESE FUNDS TO THE CORPS. THE PURPOSE OF MY TESTIMONY AT THIS TIME IS TO URGE YOUR SUPPORT FOR FUNDING THE ORIGINAL $4 MILLION CAPABILITY ORIGINALLY EXPRESSED BY THE CORPS AND, HOPEFULLY, INCLUDING LANGUAGE DIRECTING THE CORPS TO BEGIN CONSTRUCTION. THE LOCAL SPONSORS OF THIS PROJECT, THE CITY OF HOUSTON, THE CHAMBERS-LIBERTY COUNTIES NAVIGATION DISTRICT AND THE TRINITY RIVER AUTHORITY BELIEVE THE FEDERAL GOVERNMENT SHOULD HONOR THE COMMITMENTS AGREED TO IN 1967 WHEN A LOCAL ASSURANCE CONTRACT WAS SIGNED WITH THEM. I TEND TO AGREE WITH THEM. THIS SUBCOMMITTEE HAS BEEN MOST SUPPORTIVE AND EXTREMELY PATIENT OVER THE YEARS WITH REFERENCE TO WALLISVILLE LAKE FOR WHICH I AM DEEPLY GRATEFUL. IT IS EXTREMELY DISTURBING TO ME THAT THIS ADMINISTRATION WOULD WITHDRAW ITS SUPPORT - CONTRARY TO CONGRESSIONAL INTENT - AT A TIME WHEN THIS PROJECT IS AT LAST READY TO GO FORWARD. ANY RECOMMENDATIONS OR ASSISTANCE THAT YOU AND YOUR SUBCOMMITTEE MEMBERS IN YOUR WISDOM COULD PROVIDE WOULD BE DEEPLY APPRECIATED.

MR. CHAIRMAN, AGAIN I APPRECIATE YOUR KIND CONSIDERATION. ALL OF THESE FEDERAL PUBLIC WORKS PROJECTS ARE CRITICAL TO THE ECONOMIC DEVELOPMENT OF MY DISTRICT, WITH ITS MANY PETROCHEMICAL PLANTS AND HEAVY INDUSTRIAL OPERATIONS THAT ARE SO VITAL TO OUR COUNTRY. PORTS ALONG THE TEXAS GULF COAST ARE AN INTEGRAL PART OF THE ECONOMY OF THE NATION. THESE PROJECTS INSURE THE PRODUCTIVITY AND GROWTH OF THAT AREA AND HELP TO REMOVE THE EVER-PRESENT THREAT OF FLOODING AND ITS TRAGIC EFFECTS.

I HAVE WITH ME TODAY A NUMBER OF PERSONS VITALLY CONCERNED WITH THESE PROJECTS. THEY ARE HERE TO SUPPORT THESE STATEMENTS AND TO ANSWER ANY QUESTIONS THE SUBCOMMITTEE MAY HAVE.

STATEMENT OF JEFFERSON COUNTY NAVIGATION DISTRICT

SABINE-NECHES WATERWAY

The Jefferson County Navigation District of Beaumont, Texas is the local sponsor of the Sabine-Neches Waterway as authorized by Congress.

The Sabine-Neches Waterway is a federally maintained navigation project extending from the Gulf of Mexico, through a jettied entrance at the mouth of Sabine Pass, inland to the deepwater ports of Port Arthur, Beaumont, and Orange, Texas, a total distance of approximately 84 miles. The project includes deep draft channels of the following dimensions; 42 feet deep and 800 feet wide across the Sabine Bank in the Gulf of Mexico; 40 feet deep and a varying width of 800 feet to 500 feet through the jetty channel; a depth of 40 feet and a width of 500 feet from the jetty channel to the Turning Basins at Port Arthur; a 40 foot depth and a 400 foot width from Port Arthur via the Sabine-Neches Canal and the Neches River to the Port of Beaumont; a 30 foot depth and a 200 foot width from mouth of Neches River upstream thru the Sabine River to the Port of Orange.

In addition to the above dry cargo ports, Mobil Oil Corporation, Texaco, Incorporated, Chevron, American Petrofina Company of Texas and Union Oil Company of California have located their major refineries along this ship channel. These five refineries have a total rated processing capacity of 1,176,000 barrels of crude oil per day. This is approximately 12% of the nation's refining capacity. A great majority of this crude oil is imported by tankers through this waterway and the ports and energy related industries along this channel have billions of dollars invested in pipe lines, tanks, wharves, docks and other plant installations.

A recent survy indicates that the principle industries of this area are engaged in a 430 million dollar expansion and modernization program, and other projects are on the drawing board.

In addition to providing crude oil to the local refineries, Sun Marine Terminals also furnishes others with considerable oil. The Department of Energy has invested in excess of 35 million dollars in Sunoco's Neches River facilities, not including the cost of a pipeline to the Hackberry Stretegic Reserve Salt Dome oil storage terminal, nor does it include the development of the Big Hill Storage Terminal, the construction of which is well underway. The majority of this commodity is foreign imported crude oil and the handling requires the use of many large tankers which congest this already extensively used ship channel.

All of the foregoing development is largely due to the existence of the Sabine-Neches Waterway, our area's life line to the world for its exports and imports.

This extensive and expanding complex comprises a critical basic energy related industry that is absolutely vital to the nation's economic and energy and defense needs. Their diminution for any reason would have a deleterious effect nationally as well as regionally.

The U.S. Corps of Engineers reported that, in 1985 (the latest tonnage figures available), the Sabine-Neches Waterway Ports of Beaumont, Port Arthur, Sabine Pass and Orange handled more than 44,000,000 tons of dry and liquid cargoes. Shipping of this magnitude necessarily involves the use of a great many vessels which, of course, creates congestion on the waterway. To compound the problem, the present size of the oil tankers, grain vessels and cargo ships using this waterway are such that an even deeper and wider channel is needed at times, hence the importance of maintaining the waterway free of shoals.

Recent studies by the Corps of Engineers and complaints from the shipping industry reflect that there is continuous serious siltation and shoaling in the Gulf entrance channel at Sabine, and continuous extensive shoaling along several reaches of the inland channels. They find that these conditions will rapidly become worse, and, if not corrected, eventually the channel could be closed to deep sea navigation.

Correcting these conditions will decrease chances of collisions and groundings of the many vessels carrying crude oil and refined products. Such occurrences, as stated by the Corps of Engineers in their environmental impact report "would result in adverse environmental impact and public health hazards". Failure to maintain the channel would result in severe adverse economic effects on the project area, the state and even the nation. Effects would include the loss of

billions of dollars worth of facilities adjacent to the channel, loss of employment for thousands of people and disruption of the manufacture and transportation of a significant portion of the nation's "fossil fuel supply".

The Corps of Engineers' breakdown of the 4 million six hundred twenty-seven thousand dollars included in the proposed budget for F.Y. 1989, will be utilized for dredging the Port Arthur Turning Basins and the Neches River Channel, and, the rehabilitation of a section of the Sabine Pass Jetties.

As the sponsoring agency, Jefferson County Navigation District stands ready to provide all needed disposal land areas, rights-of-way, relocations and confining structures for this project.

The District, representing the above mentioned many ports, refineries, grain elevators and other shippers using this Waterway, supported by our Congressman, the Honorable Jack Brooks, respectfully request your favorable consideration for the inclusion of 4 million six hundred twenty-seven thousand dollars in the F.Y. 1989 budget, in order that this badly needed work may be accomplished.

TAYLORS BAYOU DRAINAGE AND FLOOD CONTROL PROJECT

The Jefferson County Navigation District, as one of the sponsors of the Taylors Bayou Drainage and Flood Control Project, is also responsible for the operation of the Navigation and Salt Water barrier gates near the mouth of Taylors Bayou.

Over a forty year period we have been in a position to observe the numerous artificial changes in the area that have adversely affected drainage of this stream.

The first set of existing gates were installed in 1937 and functioned as salt water barriers, not as flood gates. Later the J. D. Murphee Wildlife Management Area was created by constructing a system of levees along Taylors Bayou and the Intracoastal Canal restricting the natural course of flood waters across the wetlands into the Intracoastal and thence to the Gulf. Then in 1972, the Rhodair Gulley, Lakeside and Alligator Bayou pump stations of the Port Arthur Hurricane Protection System were installed. These pumps have a combined capacity of over two million gallons per minute and discharge into the lower reach of Taylors Bayou just above and below the salt water gates. These pumps operate during periods of flooding, raising the level of the Bayou which backs water up into homes and streets of Beaumont, Texas. State Highway 73 running from Port Arthur west to Winnie is yet another obstruction to the traditional flow of water from the developed section of Beaumont toward the Gulf. During a rain of any magnitude, a one to three foot differential builds up on the North side of this highway, holding water on the developed areas of North Jefferson County.

Construction on Phase I is almost complete. The Outfall Canal, the Diversion Channel and the Gulf-Intracoastal Waterway have been dredged, and, the Salt Water Barrier is now complete and in operation. Therefore, it is important that sufficient funds be provided to continue this urgently needed work before more costly damages are inflicted on the home owners and the businesses of our community.

As one of the sponsoring agencies, Jefferson County Navigation District stands ready to meet its commitments to furnish its share of the local assurances required.

The District, representing the people and industries of this district, and supported by our Congressman, the Honorable Jack Brooks, respectfully request that 4 million four hundred thousand dollars be included in the F.Y. 1989 budget, in order that this highly important work be continued.

Statement of Clear Creek (TX) Drainage District

The Clear Creek Flood Control Project is an absolute necessity to the health, safety, and well-being of the people who live in the Clear Creek watershed. As the land in the watershed has undergone development, pastures and farmland have been converted to parking lots, streets, runways, buildings, and other surfaces from which rain water runs off extremely rapidly. Although there have been, and continue to be, improvements made to drainage arteries in the region by local agencies, consistent with their resources, and although storm water run-off and flood plain control has been in effect in the counties of the Clear Creek watershed since 1979-80, the effects of land development and subsidence have already reached the point that Clear Creek simply cannot carry storm water away to Galveston Bay fast enough to keep water out of our homes. So, until Clear Creek is improved in its water handling capacity, we do not have the ability to make substantial improvement to the flood hazards that our citizens live with every day.

People here realize that it is not feasible to prevent flooding by a storm like Claudette which struck this area in July, 1979, and dropped 30-40 inches of rain on us in a two-day period. However, our people are getting water in their homes when much less spectacular rains occur -- five-year to ten-year frequency precipitation is causing flooding. Even those people who are not getting water in their homes are impacted: street floding is so severe that emergency vehicles cannot get through. A fire or serious medical problem occuring during, or for many hours after, such rains, would go unanswered in many places.

The Corps of Engineers has devised a plan for improving Clear Creek that is economically sound (benefit to cost ratio of 2.6), environmentally acceptable, and will completely contain the watershed run-off for a ten-year frequency storm. Furthermore, the 100-year flood plain will be reduced by 25% overall in the watershed, and by as much as 75% in some portions of the watershed. We fervently hope that appropriation of construction funds will <u>again</u> be approved and included in the FY-1989 Budget. The project is not frivolous, nor a convenience type of improvement--it deals with people's safety and health, both physical and psychological. Many of our people fear rain; anxiety levels run very high when a heavy rain lasts more than a couple of hours, especially when water starts to rise in the streets and into people's yards!

Gentlemen, we NEED the Clear Creek Project and respectfully request that the additional construction fundingof $4.3 million be included in the FY-1989 Budget.

Statement of Crystal Beach, TX

CIRCUMSTANCES PRECLUDE MY PRESENCE ON THE 12TH OF APRIL 1988 FOR THE CONGRESSIONAL HEARINGS CONCERNING THE CHANNEL DEVELOPMENT PROJECTS TO BE APPROVED BY THE ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE.

IN LIEU OF MY PERSONAL APPEARANCE PLEASE ACCEPT THIS AS NOTIFICATION THAT I AND HOPEFULLY MOST CITIZENS OF CRYSTAL BEACH AM IN COMPLETE SUPPORT OF YOUR EFFORT TO ADVANCE THE AFOREMENTIONED PROJECTS AND I WOULD APPRECIATE YOU ENTERING MY NAME AND OPINION IN THE CONGRESSIONAL RECORDS TO REFLECT THIS POSITION.

STATEMENT OF GALVESTON COUNTY COMMISSIONERS COURT

Galveston County has been the local sponsor with the U.S. Corps of Engineers for the construction of various flood control projects in Galveston County since the first seawall was started in Galveston shortly after the 1900 Hurricane. The Galveston Seawall has now been extended in length to approximately 10 miles protecting the most populated part of the City of Galveston.

In 1962 (some 14 years after the first local bond issue was passed), construction began on the seawall protecting the cities of Texas City and La Marque from the ravages of hurricanes and high tides of Galveston Bay. The Texas City Hurricane-Flood Protection Levee was completed in 1987. In addition, a flood control project was initiated to prevent flooding along Highland Bayou in the cities of Hitchcock, Santa Fe, and La Marque. Construction started in 1974 and was completed in 1982.

The final flood control project on going sponsored by Galveston County is along Clear Creek in the cities of League City and Friendswood in cooperation with the Harris County Flood Control District and Brazoria County Drainage District No. 4. Construction is now scheduled to start within a few months. Galveston County, Harris County, and the U.S. Corps of Engineers signed the Clear Creek contract on June 30, 1986, on the Highway 146 bridge over Clear Creek on the boundary between Galveston and Harris counties. We appear before this Honorable Committee to urge your support for appropriations for construction on Clear Creek.

CLEAR CREEK FLOOD CONTROL PROJECT

The Galveston County Commissioners Court respectfully urges the Honorable Committee to approve $4,300,000 in construction funds for the Clear Creek Flood Control Project. These funds are included in the Administration's budget for FY 1989, and the U.S. Corps of Engineers will let a contract for the first phase of this project during FY 1988 so the project is finally underway.

It is extremely important that the Clear Creek Flood Control Project begin construction in FY 1988 and continue in FY 1989 with the funds recommended by the Administration. After approximately 15 years of planning, the Corps of Engineers made final engineering decisions on this project in 1983 and has completed detailed engineering design for the second outlet from Clear Lake to Galveston Bay and the flood gate to control flow. The Design Memorandum has been approved for construction. This project is designed to provide flood relief for over 500,000 people in the Clear Creek watershed in Galveston and Harris counties. It was also designed in such a way as to protect the sensitive environment of Clear Creek, and this decision received overwhelming public support in a January, 1982, public hearing. The two local sponsors, Galveston County and Harris County, support the Corps of Engineers design which will accommodate a 10-year flood with the remainder of the 100-year flood plain to be protected by flood plain management.

In 1979, over 2,000 homes in Friendswood and League City along Clear Creek were flooded twice--in July from Tropical Storm Claudette and again in September. Several thousand homes were also flooded in Brazoria and Harris counties. Losses from flooding in these three counties from the 1979 floods were well over $200,000,000. People are desperate to do something--almost anything--on Clear Creek, and the Corps of Engineers is trying to expedite this project.

Inasmuch as the Clear Creek Flood Control Project has been in the study and design stage for 20 years (authorized in 1968), it is most urgent that when construction starts this year, it continues in FY 1989. The study has been a high priority by the Corps of Engineers and over $2,500,000 in planning and engineering has already been spent. We sincerely hope you will approve $4,300,000 in construction funds for FY 1989 for construction of the project.

Galveston County passed a $5,000,000 bond election in November, 1985, to provide its local share of the cost. Thus, we are ready, willing, and able to assume our local responsibility for this project.

Thank you for your consideration of these requests and for your time in allowing us to be present at these hearings. We stand ready to assist you in any way and to furnish any additional information you may require.

RESOLUTION OF CITY OF FRIENDSWOOD, TX

CITY COUNCIL RESOLUTION NUMBER R 88-11

A RESOLUTION ENDORSING THE U.S. ARMY CORPS OF ENGINEERS CLEAR CREEK FLOOD CONTROL PROJECT; AND URGE THE PROJECT CONTINUE AS EXPEDITIOUSLY AS POSSIBLE.

* * * * * * * * * * *

WHEREAS, It has been determined a serious flood problem exists in the Clear Creek Watershed where existing residential and commercial areas are periodically subject to extensive damages from rising waters in the creek; and

WHEREAS, the citizens of the Clear Creek Watershed will continue to suffer economic loss and mental anguish as a result of flooding if this project is not continued; and

WHEREAS, the United States Congress in 1968 authorized the U.S. Army Corps of Engineers to design a flood control project which would provide a significant measure of protection from recurring flooding problems in the Clear Creek Watershed; and

WHEREAS, the study was completed and a consensus was achieved by all local sponsors and entities and endorsed by the 67th Texas Legislature; and

WHEREAS, the project was approved by the U.S. Army Corps District in Galveston and the Corps Southwest Division;

WHEREAS, further delays concerning design will significantly increase the cost of the project as well as the probability of additional flooding;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FRIENDSWOOD:

THAT the City re-endorse the U.S. Army Corps of Engineers Clear Creek Flood Control Project as planned and support the Corp of Engineer's efforts to reach a satisfying completion as expeditiously as possible.

THAT the City strongly urge the Congress to take whatever additional action is necessary to expedite this project and thereby reduce the emotional, physical and economic suffering due to flooding.

THAT the City Secretary forward official copies of this resolution to the President of the United States, the Speaker of the House of Representatives and President of the Senate of the United States Congress and to all members of the Texas Delegation to the Congress, with the request that this resolution be officially entered into the Congressional Record.

UNANIMOUSLY, PASSED, APPROVED AND ADOPTED THIS the 11th day of April, 1988.

Ralph L. Lowe
RALPH L. LOWE, MAYOR

JIM HARRELL, COUNCILMAN

Robert W. Wicklander
ROBERT WICKLANDER, COUNCILMAN

Phyllis J. Lee
PHYLLIS LEE, MAYOR PRO-TEM

Evelyn Newman
EVELYN NEWMAN, COUNCILMAN

Jan Jordan
JAN JORDAN, COUNCILMAN

Joe D. Prihoda
JOE PRIHODA, COUNCILMAN

STATEMENT OF JEFFERSON COUNTY (TX) DRAINAGE DISTRICT NO. 3

Works on the Taylor's Bayou Drainage and Flood Control Project has continued to progress for several years and during that period of time a great deal has been accomplished. The citizens and residents of this area are anxiously awaiting the day when we can say that the project has been completed.

Since work has commenced, the outfall channel for the project has been completed, the widening and deepening of the intercoastal water way has been completed and the salt water barrier and seven salt water intrusion gates have been installed. Phase I of the project is almost totally completed. Phase II of the project is well under way and the widening and deepening of Taylor's Bayou has commenced under Phase II of the project. It is of vital importance that Phase II of the project be continued and finished as soon as possible in order to tie in the overall project so that flooding of the homes, residential areas and vital farm land will no longer continue.

The Corp of Engineers has informed us that they are proceeding with Phase II and the $4.4 million allocated in the current proposed budget for the continued work on this project is of vital importance to the area.

Jefferson County Drainage District No. 3 is again requesting your support and assistance in having this amount included in the budget for the fiscal year 1989.

STATEMENT OF JEFFERSON COUNTY (TX) DRAINAGE DISTRICT NO. 6

Over the past several years the Taylors Bayou Drainage and Flood Control Project has been moving ahead with the acquisition of channel rights of way, the purchase of spoil disposal areas, the coordination of mitigation with environment agencies, and the widening and deepening of the main drainage channels. These efforts are to provide better drainage and flood relief to citizens living in the watersheds of this project.

This past spring Phase I of the project was put into operation and a reasonable degree of flood relief was realized by upstream residents. Phase II is well underway and with each section completed additional benefits will be received.

This project would not be possible without federal assistance and the continuing efforts of our own Congressman Jack Brooks. The citizens of this area are indebted to the several Congressional committees that review appropriations each year and have seen fit to continue funding for the Taylors Bayou Project.

The funding level for fiscal year 1989 is $4.4 million. The District supports this request and urges you to approve it.

Additionally, the District also supports the funding requests for the Sabine-Neches Waterway (O&M) for $4,627,000 and the Gulf Intracoastal Waterway (O&M) for $14,173,000.

Your thoughtful consideration and approval of funding for these very important and beneficial projects is requested and appreciatetd.

STATEMENT OF CITY OF TEXAS CITY, TX

On behalf of the City Commission and the citizens of Texas City we sincerely request your support for adequate appropriations for the advanced engineering and design of the Texas City Channel and for the maintenance and operation of the existing channel and turning basin. The Port of Texas City handles over 41 million tons of shipping annually, the majority of which consists of raw and finished products from our multi-million dollar petrochemical industries. The economic life of our community depends to a large degree upon the industries and the many supporting service and retail businesses. These significant channel improvements would most certainly reduce transportation costs into Texas City and tend to increase local capital investment and create new employment opportunity, thereby benefitting the overall local economy, which has been particularly hard hit these past few years.

We also support the Clear Creek construction project as the residents in the Clear Creek area have been flooded repeatedly because of heavy rainfall and poor drainage. The Clear Creek construction is absolutely essential in order to relieve the problem. The citizens of Galveston County passed a $4 million dollar bond program in November, 1985, to provide its local share of the cost to this vital program that affects so many of our citizens.

We urge your support of the above projects and their inclusion in the FY 1989 budget. Should you have any specific questions pertaining to these projects, we will be most willing to cooperate in providing any information we have available for the use of your committee.

STATEMENT OF THE PORT OF PORT ARTHUR, TX

We respectfully ask that you favorably consider the public works funds request, by our Congressman Jack B. Brooks, for the Operations and Maintenance of the Sabine Neches Waterway and the Gulf Intracoastal Waterway of Texas. Only minimally necessary funds are requested, to insure the operation and maintenance of these vital federal waterways.

The major refineries on our Sabine Neches Waterway annually produce a high percentage of America's energy fuels. The Waterway handles up to 44,000,000 short tons of commerce, including import crudes, domestic and export shipments as well. The economic and military security of America depends on keeping these vital waterways open, now and in the future.

The Gulf Intracoastal Waterway of Texas is an indispensable connecting link between hundreds of chemical and petrochemical plants and other refineries, here and across the Gulf Coast. Combined plant investment of these essential industries exceeds $30 billion, just on the Texas segments of the Gulf Intracoastal Waterway, alone, according to estimates available.

No new construction is anticipated in these requests, and the funds appropriated are vital to our economy and national defense. Your favorable consideration is justified, we submit, and is respectfully requested.

STATEMENT OF HARRIS COUNTY (TX) PRECINCT ONE

CLEAR CREEK WATERSHED PROJECT

I wish to submit this letter in testimony of my strong support for funding of the FY 1989 $4.3 million budget for the Clear Creek Public Works Construction Project. I write this letter not only on behalf of Harris County, but rather for all areas adjacent to Clear Creek, including Brazoria and Galveston Counties; all of which are critically dependent on this project's ultimate completion. These areas are heavily dependent on downstream improvements; improvements that are so significant, they cannot possibly be accomplished without Federal Assistance.

The Clear Creek watershed comprises an area more than 260 square miles through the 18 1/2 mile length of the project. Throughout this stretch there are 17 major tributaries entering Clear Creek. Whether in Galveston County, Harris County or Brazoria County, improvements of upstream reaches on these tributaries by local agencies impose a corresponding requirement for improvements of the principal receiving stream. Federal funding of Clear Creek provides the catalyst for these improvements.

Significant time and effort has gone into the Federally funded work the Corps of Engineers has already completed in the Clear Creek Watershed, and the funds requested for their construction project is not, relatively speaking , that substantial. I assure you that the completion of their work will provide an immensely substantial benefit to our community, and especially to those residents of the Clear Creek Watershed who anxiously walk with fear each time it begins to rain, hoping against hope that they will not experience another devastating flood.

A commitment to fund this phase, as well as completing the ultimate plan on Clear Creek, will have a significant effect on the socio-economic conditions of this heavily growth oriented area. Additionally, it would impose a positive impact on the 19,000 acres below the Clear Creek flood level and the National Aeronautics and Space Administration facilities located within its influence regime. Considering these facts, we sincerely request your favorable consideration in funding this current project.

HOUSTON SHIP CHANNEL PROJECT

Please permit me to express my strong support fo the funding of the FY 1989 $5.725 million budget for the Houston Ship Channel Public Works Maintenance Project. The Houston Ship Channel is, by far, one of the most critical water courses in the Gulf Coast Area. The Ship Channel not only has a major impact of flood management for several counties, but as the third largest port in the nation, its influence extends nationwide.

As you are aware, Harris County is located on the flat coastal plains of our State in an area subject to heavy and intense annual rainfall and the annual threat of tropical storms and hurricanes. It is, in my opinion, one of the absolutely most difficult areas to drain and protect from flooding in the United States. This is borne out by the fact that in 1979, for instance, the Houston metropolitan area accounted for an estimated 43 percent of all claims paid by the National Flood Insurance Program.

The importance of the Houston Ship Channel in watershed management is emphasized by the fact that only two (2) streams in this region do not connect to the Channel. All of the remaining 20 watersheds of this area, including the San Jacinto River, rely on the Ship Channel as a prime effluent source to the Gulf of Mexico.

As a commercial seaway its role is well known. The Ship Channel offers a principal link in trade between the Gulf Coast and the Far East, Asia and numerous other foreign ports. It plays an undisputed role as a primary point of import and export of grain, bulk fuel products, containerized cargo, and many other goods vital to this nation's economy.

The level of funding requested is certainly not significant, but it is critical to the ultimate needs of this principal waterway. I urge you to favorably consider approval of the requested appropriation.

STATEMENT OF CITY OF BEAUMONT, TX

In accordance with request from the Honorable Jack Brooks, Congress, 9th District, Texas, and on behalf of the City of Beaumont, I wish to make comments on three specific projects being considered in your FY 1989 Budget.

1.	Hillebrandt Bayou and Tributaries (Survey)	$ 200,000
2.	Taylor's Bayou (Construction)	$4,400,000
3.	Sabine-Neches Waterway (O&M)	$4,627,000

The Hillebrandt Bayou and Taylor Bayou projects, when completed, will have a favorable effect upon our ability to alleviate flooding problems within the City of Beaumont. Approximately, the Western one-half of the City of Beaumont drains into the Hillebrandt Bayou, and then to Taylor's Bayou. Any enlargement to these facilities should have a favorable effect on our much needed drainage improvements. Many of our current drainage problems including house flooding and street flooding are dependent on these projects to alleviate inadequate outfalls. The Sabine-Neches waterway project is essential for the continued operations of the Port of Beaumont and shipbuilding industry.

Your favorable ruling on these projects is essential to the economic stability of the City of Beaumont, and I request that you continue to fund these projects.

Thank you.

STATEMENT OF GUY C. JACKSON III, ANAHUAC, TX

I strongly support the proposed $238,000 of operation and maintenance funds for Wallisville Lake, Texas Project presently included in the FY 1989 Budget. This amount is adequate for this fiscal year for this purpose. I respectfully request that these funds be included in the FY 1989 Budget.

In addition, because of the perilous economic situation in the lower reaches of the Trinity River, it is imperative, from my viewpoint, that additional funds be appropriated and instructions be given to the Corps of Engineers to start construction and complete the Wallisville Lake, Texas Project without delay.

Our agricultural industry is at a virtual standstill. Rice production has been struck such a blow that it's supporting infrastructure is on the verge of collapse. The irrigation systems, farm equipment, parts supply services, grain storage and drying facilities, aerial applicators and the other services that "make the rice farming go" are on the absolute edge of disaster.

The fall in world oil prices has dealt a very severe blow to our local petro-chemical industry which has been an economic mainstay of this area for over half a century. We in Chambers County are facing continued double digit reductions in our ad valorum tax values due to the impact of the lowered price of oil.

Without the Wallisville Lake, Texas Project in being and providing an assured source of not only agricultural irrigation water, but a source of municipal and industrial water for the future, the economic forecast for this area is extremely bleak well into the next century.

Frankly, this Project is the means by which the existing State Appropriated Water Rights to historic users in the lower reaches of the Trinity River are protected from the raids of the large municipalities in and alongside the Trinity River Basin.

Many years ago there was an extremely hard fought battle between the metropolitan areas at the upper and lower ends of the Trinity River and the lower river appropriators which resulted in the lower river appropriators being protected from the inroads of the metropolitan areas then, now and in the future. If Wallisville is not constructed, the counties on the lower end of the Trinity River will be helpless in the face of the onslaught of the political superpowers in this state. I cannot say it any other way, for that is the truth. If Wallisville is not built the trap door is sprung on the gallows and the lower river's economic head is in the noose.

I would respectfully request that you insert the following language in the FY 1989 Appropriations Bill:

"Wallisville, Texas-The Secretary of the Army, through the Corps of Engineers, is directed to

immediately initiate construction of the Wallisville Lake, Texas Project under terms DACW 64-67-C-0108, signed in 1967 with the Trinity River Authority, the City of Houston, and the Chambers-Liberty Counties Navigation District."

I am convinced that the current recommended Plan adequately addresses the actual needs of all who have interest in or concerns for the Wallisville Project; and that the yet to be devised mode of operation of the Project is the actual core of concern to be dealt with amongst this group and can be dealt with at the proper time.

STATEMENT OF JEFFERSON COUNTY (TX) COMMISSIONERS' COURT

The Commissioners' Court of Jefferson County, Texas, would like to go on record in support of the following projects which pertain to Jefferson County. It is our understanding that the Subcommittee hearings are scheduled for 10:00 a.m. on Tuesday, April 12, 1988.

(1) Gulf Intracoastal Waterway
(2) Hillebrandt Bayou & Tributaries
(3) Sabine-Neches Waterway
(4) Taylors Bayou

It is our opinion that said projects should be included in the 1989 budget and these projects are vital to our area and are in the best interest of the citizens of Jefferson County.

STATEMENT OF JEFFERSON COUNTY (TX) DRAINAGE DISTRICT NO. 7

As one of the local sponsors, Jefferson County Drainage District No. 7 endorses the proposed $4,400,000.00 provided in the 1989 fiscal year budget for the continued construction of the Taylors Bayou Project.

Taylors Bayou and its tributaries drain about sixty percent of Jefferson County. Through the years, extensive upstream improvements have been made and further improvements are being planned to keep our residents from experiencing flooding during heavy rainfalls which commonly occur in the Gulf Coast area. Without these necessary improvements to Taylors Bayou, the full benefits of the upstream drainage projects will not be realized.

The completion of this project is critical to our future growth and the well-being of our citizens.

We request the Committee's approval of the $4,400,000.00 proposed in the 1989 fiscal year budget.

RESOLUTION OF THE CITY OF GROVES, TX

RESOLUTION NO. 88-03

WHEREAS, the Groves City Council supports the following public works projects that Congressman Jack Brooks will present before the louse Committee on Appropriations and Senator Lloyd Bentsen will resent before the Senate Committee on Appropriations for funding in he fiscal year 1989 Budget:

a)	Channel to Port Bolivar (operation & maintenance)	$ 58,000
b)	Chocolate Bayou (operation & maintenance)	1,245,000
c)	Clear Creek (construction)	4,300,000
d)	Galveston Harbor & Channel (operation & maintenance)	3,264,000
e)	Gulf Intraconstal Waterway (operation & maintenance)	14,173,000
f)	Hillebrandt Bayou and Tributaries (survey)	200,000
g)	Houston Ship Channel (operation & maintenance)	5,725,000
h)	Sabine-Neches Waterway (operation & maintenance)	4,627,000
i)	Taylors Bayou (construction)	4,400,000
j)	Texas City Channel (construction)	1,500,000
k)	Texas City Channel, 50' project (advance engineering & design)	413,000
l)	Wallisville Lake (operation & maintenance)	238,000

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GROVES, TEXAS:

THAT this body does hereby go on record as wholeheartedly supporting the above projects for funding in the fiscal year 1989 Budget; and

BE IT FURTHER RESOLVED that a copy of this Resolution be furnished Congressman Jack Brooks, Senator Lloyd Bentsen, and members of the House and Senate Committees on Appropriations as evidence of the Groves City Council's support.

PASSED, APPROVED and ADOPTED this 4th day of April, 1988.

Sylvester Moore

Sylvester Moore, Mayor

STATEMENT OF THE CITY OF NEDERLAND, TX

This is to advise that the City of Nederland is situated in the Ninth Congressional District, Texas, and recommends your consideration of FY 1988 Budget appropriations for the following projects:

PROJECT	FY 1989 BUDGET
Channel to Port Bolivar (oper. & maint.)	58,000
Chocolate Bayou (oper. & maint.)	1,245,000
Clear Creek (construction)	4,300,000
Galveston Harbor & Channel (oper. & maint.)	3,264,000
Gulf Intracoastal Waterway (oper. & maint.)	14,173,000
Hillebrandt Bayou and Tribs. (survey)	200,000
Houston Ship Channel (oper. & maint.)	5,725,000
Sabine-Neches Waterway (oper. & maint.)	4,627,000
Taylors Bayou (construction)	4,400,000
Texas City Channel (construction)	1,500,000
Texas City Channel, 50' project (Adv. Eng. & Design)	413,000
Wallisville Lake (oper. & maint.)	238,000

Your consideration of these recommendations is appreciated.

STATEMENT OF PORT OF GALVESTON, TX

The President's FY 1989 Budget includes $3,264,000 for operation and maintenance of the Galveston Harbor and Channel. The continued maintenance of the harbor and channel to the project depth is of vital importance. The capability of being able to load grain vessels and other ships to a 40 foot draft is essential to achieve savings in water transportation costs thereby helping to keep America competitive in world markets.

Your support of this appropriation will be appreciated.

STATEMENT OF THE HARRIS COUNTY (TX) FLOOD CONTROL DISTRICT

I am James B. Green, Director of the Harris County Flood Control District, Houston, Texas, and I respectfully appeal to you on behalf of our District, Harris County Judge Jon Lindsay and the Harris County Commissioners Court, and the residents of the Clear Creek Watershed, to lend your support to the U. S. Army Corps of Engineers' Clear Creek Project, by approving the $4,300,000 annual project budget.

Harris County has waited long and with much anticipation for the Clear Creek Project to get underway, especially those residents who have, time after time, sustained damage to their homes and property as a result of flooding along this waterway.

Since 1966, a unified voice of support has been expressed by the area residents of the Clear Creek Project. Without this local support, the Harris County Flood Control District would not have been able to implement its own maintenance and rectification efforts in the watershed while awaiting approval of the Corps' Clear Creek Project.

In 1935, Harris County experienced a rain storm of such magnitude that as it swept across the County, flood waters inundated two-thirds of the County and claimed 15 lives. Destruction was widespread; it so silted the Houston Ship Channel that it took eight months to clear before conditions were once again safe for navigation. As a result of this 1935 catastrophic event, the U. S. Army Corps of Engineers constructed the Addicks and Barker Dams reservoir system in the western portion of Harris County. A system that today still provides protection to our area.

The Harris County area has a long history of heavy rainfall and resultant flooding. The flooding problem is caused by a combination of meteorological, topographic, hydrologic and urban development factors. Harris County is located on the flat coastal plains of our State, in an area subject to heavy and intense annual rainfall. Precipitation varies both temporally and spatially. These variations are often substantial in degree; such is the case when the area is affected by a tropical storm or hurricane. To further reinforce this evaluation, thunderstorm events often produce a high intensity of rainfall which can be localized in one watershed within the County. The Harris County Flood Control District's computerized Automated Flood Observation and Warning System's collected data for 1987 reveals a variation of approximately 30 inches of rainfall from the far eastern watersheds to the far western watersheds in Harris County. In my professional opinion, Harris County is absolutely one of the most difficult areas to drain and protect from flooding in the United States. This is borne out by the fact that in 1979, the Houston metropolitan area accounted for an estimated 43 percent of all claims paid by the National Flood Insurance Program.

In December of 1981, the Corps of Engineers completed their first draft of the General Design Memorandum for the Clear Creek Project and Federal funding was approved on August 15, 1985 authorizing the

Secretary of the Army to mitigate construction. We looked at this as a milestone in providing cost-effective and efficient flood protection for the residents of Harris County and Galveston County to the south. Now a request for continued funding of first phase construction work by the Corps is before the Senate Committee on Appropriations. It is imperative that funding for the Clear Creek Project be approved. Not only will the projected improvements provide relief from flooding to the residents of this watershed, it is an integral part of overall drainage and stormwater management in Harris County.

The Clear Creek Watershed drains approximately 260 square miles of flat, coastal plain which has a maximum elevation of approximately 75 feet. Clear Creek and its 17 tributaries drain into Clear Lake and from there into Galveston Bay which is recognized as the largest and most important (economically and ecologically) bay system along the Texas Gulf Coast.

This is a rapidly growing urban area which includes the site of the National Aeronautics and Space Administration Johnson Space Center, a number of local branches of national aerospace corporations and contractors, the homes of the technical and professional people who staff those facilities, and a portion of the spillover of the petrochemical oriented businesses that line the Houston Ship Channel.

Mr. Chairman, let me reiterate the Corps' statement on Flood Damage Reduction contained in their General Design Memorandum draft:

> "Flooding is a serious problem in the Clear Creek Watershed. Throughout the watershed, Clear Creek meanders and has a small channel capacity relative to the areas drained; consequently, flooding is experienced at frequent intervals throughout the area. As the area continues to be urbanized, the flooding increases in intensity and frequency. The flow of floodwaters in the watershed is impeded by the relatively flat topography. Clear Creek and its tributaries are crossed by numerous bridges and pipelines which further restrict the passage of flood waters and increase flood stages."

> "In the Clear Creek basin, there are about 19,000 acres of land subject to flooding by the 100-year storm. Most of this area is along the main channel with a smaller amount along the various tributaries. In the 100-year flood plain, approximately 12,300 acres or 65 percent is urban and built-up; the reamining 6,700 acres are distributed between agricultural (1,200), forest and wetlands (2,700), water bodies (1,600) and vacant and open space (1,200). The 100-year flood plain is delineated on Figures I-2 and I-3; this flooding is coincidental with a tidal elevation of two feet above mean sea level in Galveston Bay. The flood plain shown is based on detailed hydraulic studies of the area."

> "The area's vulnerability to tropical storms and hurricanes is another factor that demands flood control needs. The widespread flooding that accompanied tropical storm

> "Claudette" in July of 1979 emphasized the seriousness of this situation. This storm, which caused in excess of $227.5 million dollars in total damages, is regarded as the worst in the area's history. Within the Clear Creek Watershed, over 5,000 structures were flooded and the total residential and commercial damages exceeded $90 million dollars. Major floods in 1973, September of 1979, along with Hurricane Alicia in 1983 which caused an estimated $33.2 million in Harris County alone, also caused substantial flooding and economic loss along Clear Creek."

Clearly, the Corps of Engineers has identified the need to reduce the recurring flood damages sustained in the Clear Creek Watershed.

Much time and effort has gone into the Federally funded work the Corps of Engineers has already done. I realize the amount requested for their construction project is not that substantial, relatively speaking. I can assure you that the completion of their work will provide an immensely substantial benefit to our community, State, Nation, and especially to those residents of the Clear Creek Basin who anxiously walk with fear each time it begins to rain, hoping against hope that they will not experience another devastating flood.

Senator Johnston, Federal monies expended in support of the Corps' Clear Creek Project will indeed prove, over the years, to be a wise and prudent decision.

STATEMENT OF THE CITY OF PORT ARTHUR, TX

GULF INTRACOASTAL WATERWAY (OPERATION AND MAINTENANCE)

The City of Port Arthur fully supports the request for$14,173,000 for operation and maintenance of the Intracoastal Waterway System.

Approximately 12 miles of the busiest part of this waterway is within the City limits of Port Arthur, and it plays a vital role in serving the major industry of this area.

The City of Port Arthur would like to go on record in support of this operation and maintenance.

SABINE-NECHES WATERWAY (OPERATION AND MAINTENANCE)

The City of Port Arthur would like to go on record for approval of the fiscal year 1987 funds, $4,627,000, as requested by our Honorable Congressman Jack Brooks.

The economic wellbeing of all citizens in Southeast Texas and this Nation is dependent upon adequate deep water for the transportation of goods produced to serve the Nation. Approximately 11% of the Nation's oil supply is handled in this area.

Your favorable action would be appreciated.

TAYLORS BAYOU (CONSTRUCTION)

The City of Port Arthur fully supports the request of Jefferson County Drainage District #6 for the Fiscal Year 1987, for $4,400,000, to plan for the construction of flood control on Taylor's Bayou. The flooding was caused by the normal development of the upper watershed area and heavy rains this past year.

The City of Port Arthur wishes to go on record in support of this flood control project and encourages you to approve funds for the continuation of this project.

Senator DECONCINI. Congressman Brooks, would you have all of those people from Texas here in the room supporting these projects please stand up?

We are glad to have you all heree I have no questions. All the testimony submitted by those organizations that you have indicated will appear in the record.

I yield to the Senator from Idaho.

Senator MCCLURE. Thank you very much, Mr. Chairman.

I just have one question.

Mr. Chairman, is this OMB refusal to release the funds the product of the fact that they don't honor the report language? Is it that particular fight, or is it a different consideration by OMB?

Mr. BROOKS. I don't really understand why. I think that they are just holding up the money so that they don't spend it, Senator.

We have had a lot of controversy about it over the past by the environmentalists, but we have resolved that. We had a federal judge, I have mentioned him unfavorably in the past, a district judge, who stopped it all for a while, and then the court of appeals turned it over. After 14 years, it is all free and clear and ready to go. It has been redesigned.

I can think of no reason why the OMB didn't expend that money, except that they are just like my uncle, they don't like to spend money, they like to hold on to it. He died rich, and I guess they are going to die rich too, because they don't like to spend it. [Laughter.]

Senator MCCLURE. The reason I asked that question is OMB has issued a directive to all of the agencies, including the Corps, that said that if all Congress did was to put it in the report language, you don't have to honor that because that is just a congressional suggestion, rather than a congressional mandate.

Mr. BROOKS. If that proves to be the case, I would hope, and I did ask that the committee would direct the Corps of Engineers to spend the money.

Senator MCCLURE. I have suggested to OMB, if they really want to pursue that, we will pass a bill that is about the size of a telephone book. We will put all of the report language in the legislation. I don't think that that is a very constructive response to a not very constructive suggestion.

Mr. BROOKS. I can think of a one-line authorization that would direct the Corps of Engineers to spend the appropriated funds for Wallisville Lake. That is all you need to put in. It won't be any long deal, and they will understand that.

Senator MCCLURE. I think so. You have a way of cutting through so that people understand. [Laughter.]

Thank you.

Senator DECONCINI. Senator Reid, do you have some tough questions for your former House colleague?

Senator REID. I have a lot of questions, but he has such a large backup today, that I don't think I am going to ask any of them.

Mr. BROOKS. He is not only my friend and former colleague, he is my neighbor.

Senator DECONCINI. Thank you, Chairman Brooks.

Thank you, ladies and gentlemen from Texas. We appreciate the support that you have demonstrated here.

Mr. BROOKS. Thank you, Senator. I think that we should get more money for testifying in a shorter period of time, don't you?

Senator DECONCINI. We will put that on the tally sheet.

PREPARED STATEMENTS OF SENATORS BENTSEN AND GRAMM OF TEXAS

Before calling the Trinity Basin witnesses, Senators Bentsen and Gramm have submitted statements which I want to incorporate at this point.

[The statement follows:]

STATEMENT OF SENATOR BENTSEN

Mr. Chairman, members of the Committee, I wanted to appear before you this morning to urge your continued support for many of the various water projects in Texas. My testimony will be very brief. As is my custom, however, I do plan to communicate with you further regarding some specific requests.

As you well realize, these projects are essential to my state's and indeed the nation's continued economic vitality. Many of the navigation projects improve our ability to conduct international commerce which is essential to bringing our trade deficit down. The flood control projects help to protect our homes and businesses from flooding disasters that can cripple a community. Many of the operation and maintenance projects keep our infrastructure of ports and dams from deteriorating. The studies provided for identify problems before they turn into disasters and reveal unique and cost-effective ways to solve them. In short, these projects represent part of the spine of our nation's infrastructure. They keep people working and businesses prosperous.

Mr. Chairman, I need not labor the point long. Your Committee has supported many of these projects in the past, and I certainly urge you to continue to do so.

The representatives you will hear from today have made significant contributions to building and maintaining our nation's infrastructure. Their work is often difficult. It

is sometimes unrewarding. What they do many times brings elation and relief to some and grief and bitterness to others. I guess it is a lot like what we do here in Congress, Mr. Chairman, except over the years we seem to please fewer and fewer people.

I think we all owe a personal debt to these fine Texans for what they do to improve the quality of life for all our citizens. But perhaps the most tangible way to express this sentiment is to continue to support their work through the appropriations process. For the past eight years or so, we have watched the deficit grow and the pressure to reduce it has also grown. It becomes harder and harder to keep funding levels where they were the year before, and even harder to fund new activities and projects equally essential as some old ones. I understand that predicament very well. The President's fiscal year 1989 budget request contains the lion's share of the projects we need to keep funding. There are still others. I pledge to work with the Committee to see if we cannot fund some of the vital projects that the President's budget left out.

Mr. Chairman, members of the Committee, I appreciate your continued leadership in this area. My constituents appreciate it as well. I know that you will listen to them and hope that you will support their work. I thank you.

STATEMENT OF SENATOR GRAMM

Mr. Chairman and members of the subcommittee, I appreciate having the opportunity to submit the following statement on behalf of the U.S. Army Corps of Engineers' FY-89 funding request for Texas civil works projects contained in the President's proposed budget.

The development and the efficient coordination of water resources are important to the quality of life in Texas and to the future growth of my State. I believe the President's budget recognizes this fact and proposes funding for a number of essential water supply, flood control, navigation and other water resource projects.

More specifically, the President's proposed budget contains the funding requests for the following programs:

SURVEYS: The President proposes survey funding for eleven new projects in Texas, including Brazos River and Tributaries ($400,000); Brazos River Diversion Channel ($100,000); Cameron County ($375,000); Central Colorado River Basin ($270,000); Dallas Floodway ($75,000); Denison Dam/Lake Texoma ($250,000); El Paso and Vicinity ($300,000); Fort Bend and Brazoria Counties ($100,000); Hillebrandt Bayou and Tributaries ($200,000); Little Fossil Creek in Haltom City ($75,000); and the Rio Grande Basin ($250,000). The potential of these projects must be fully explored, and I support them.

PRECONSTRUCTION ENGINEERING AND DESIGN: The President proposes six projects to receive funds for preconstruction engineering and design activities, including Beals Creek in Big Spring ($150,000); Brazos Island Harbor in Brownsville ($400,000); Channel to Victoria ($250,000); Five Mile Creek in Duncanville ($150,000); Sims Bayou in Houston ($455,000); and Texas City Channel ($413,000). I support the funding levels proposed for these six projects.

CONSTRUCTION: The President proposes construction funding for thirteen projects in Texas, including Boggy Creek ($8,000,000) for increased channelization work along Boggy Creek to alleviate flooding in the Southeast Austin area; Buffalo Bayou and Tributaries--Addicks & Barker Dams ($1,429,000) to increase the storing capacity of the two reservoirs and tq strengthen the flood control structures at Addicks Dam; Clear Creek ($4,300,000) for channelization work to divert floodwaters from the creek and Clear Lake into the Galveston Bay; Corpus Christi Ship Channel ($4,000,000) for continued work on the widening and deepening of the channel at Corpus Christi; El Paso ($4,400,000) for the completion of the Phelps Dodge Dam and to initiate construction of the Phelps Dodge Diversion Channel in El Paso; Freeport Harbor ($11,300,000) for continued construction work to widen and deepen the channel and construction of a new north jetty at Freeport; Joe Pool Lake ($4,500,000) for continued construction of this large water supply and flood control reservoir for the Dallas/Fort Worth area; Lake Wichita/Holliday Creek ($7,500,000) for continued channelization work along Holliday Creek in Wichita Falls and dam repair work at Lake Wichita that will ultimately provide the area with a long-term flood control plan; Mouth of the Colorado River ($5,800,000) which will divert floodwaters in Matagorda County into the Gulf of Mexico; Ray Roberts Lake ($20,000,000) to continue the construction of recreational facilities at this project in the Metroplex area; San Antonio Channel Improvements ($25,000,000) to continue work on diverting floodwaters from San Antonio-area creeks away from the downtown area beyond the city; and Taylors Bayou ($4,400,000) in Southeast Texas near Beaumont for continued channelization work that will divert floodwaters in the area to the nearby Gulf of Mexico.

In addition, I support a $25,800,000 appropriation for the Cooper Lake project in Northeast Texas. Although the President has submitted a budget request of $21,800,000, the Corps of Engineers recently indicated to the Congress it could utilize an additional $4 million that I believe is worthy of FY-89 funding. The funds would have initially been part of the President's request, but at the time of its submission to the Congress, a policy debate within the Office of Management and Budget (OMB) regarding federal funding of mitigation requirements for this project had not yet been resolved. Last month, OMB approved mitigation funding for the full Cooper Lake project, and the Corps subsequently requested this additional $4 million for these activities in FY-89 to both the House and Senate appropriations committees.

OPERATION AND MAINTENANCE: The President proposes operation and maintenance funding at 43 projects in Texas. I support these requests.

Again, I believe the projects I have mentioned in this testimony are important to the future growth of Texas and I ask that the subcommittee give them favorable consideration.

Thank you for giving me the opportunity to provide this testimony, and if there is anything I can do to help you or answer any questions about any one of these projects, please let me know.

STATEMENT OF THE CITY OF WICHITA FALLS, TX

SUMMARY

The City of Wichita Falls is requesting that $500,000 be included in the FY 89 Federal Budget for continued planning, engineering and design for the McGrath Creek Flood Control Project. This funding will ensure proper coordination of the Holliday Creek Project, currently under construction (PL 99-662), with the McGrath Creek Tributary thereby avoiding potential additional costs to both the City and the Federal Government.

Mr. Chairman and Committee Members, I am Mayor Charles Harper representing the City of Wichita Falls, Texas and I am appearing before you today to request that funds be included in the fiscal year 89 budget for continued planning and engineering funds for the McGrath Creek Project.

McGrath Creek is a tributary to Holliday Creek, a much larger stream, which runs through the city of Wichita Falls. The Holliday Creek Flood Control Project was authorized by Public Law 99-662, the omnibus water bill, and is under construction as we speak. The development and construction of this project has been a textbook example of outstanding local and federal cooperation to achieve flood protection in an efficient manner. Local support of the Federal/Local partnership is overwhelming as witnessed by an 87% approval of the bond issue funding the required local match for the Holliday Creek construction.

McGrath Creek is a tributary stream to Holliday Creek which has an equally disastrous record of property damage and loss of life. The 5.6 square miles of highly urbanized drainage area created floods on May 12th & 13th of 1982 which resulted in $21.5 million of flood damage. Floods have reoccurred on an average of twice per year with an annualized damage of approximately $1.6 million each and every year. In 1986, floods in the Wichita Falls region

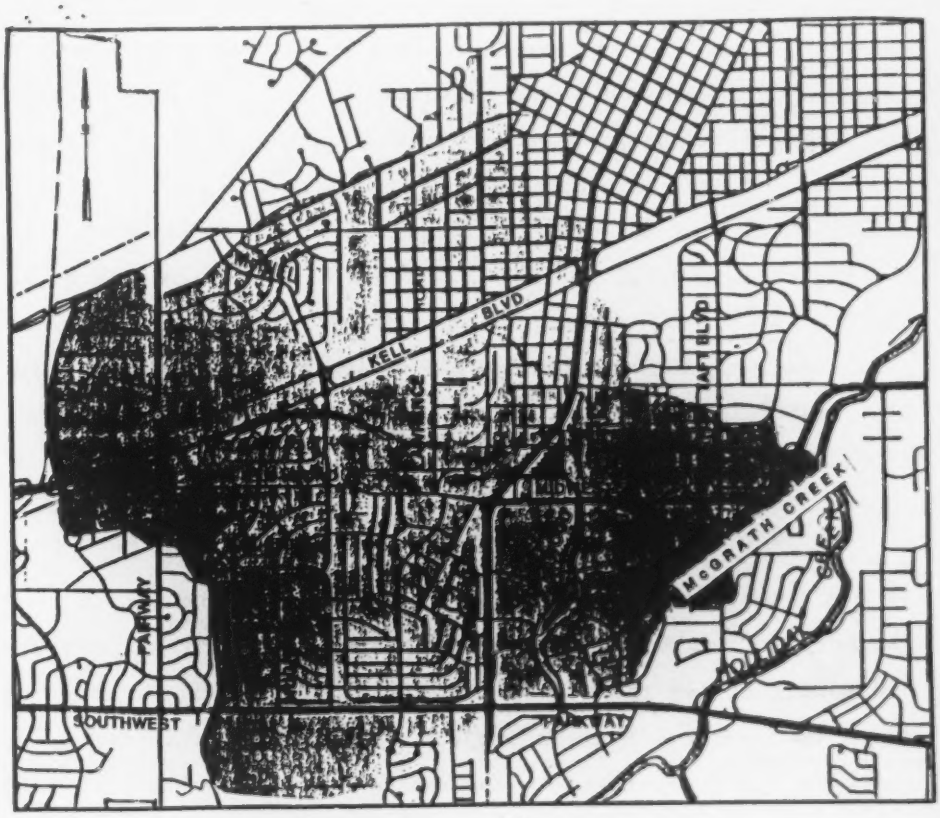
resulted in two fatalities, one being on the point of juncture of McGrath Creek and Holliday Creek.

The feasibility study for a flood control project on McGrath Creek was released by the Tulsa Division of the Corps of Engineers in July of 1985. This feasibility report was released for comment, from the Corps of Engineers Office of the Chief Engineer on December 11, 1987 and was signed by the Chief Engineer on March 25, 1988 immediately after the 90 day comment period. The delay in releasing the feasibility report for comment, was due to the emphasis which both the local and federal agencies placed upon passage of the omnibus water bill by Congress. The delay, however, resulted in continued planning and programming monies not being included in the President's budget for 1989. It is imperative that planning and engineering continue on the McGrath Creek Project to ensure proper coordination with the construction of the Holliday Creek Project currently under way. The Holliday Creek construction will be at the McGrath Creek juncture in approximately two years. Failure to aggressively pursue planning and engineering for McGrath Creek this next fiscal year may result in additional costs, by both the federal and local agencies, due to lack of coordination of construction.

We are requesting that $500,000 be included in the fiscal year '89 Corps of Engineers budget for continued planning, engineering and design during the coming fiscal year. This will enable the Corps to move the McGrath Project from the Feasibility Report stage to the General Design Memorandum status. We believe that this modest funding by the Corps of Engineers can ensure that these projects are properly coordinated, hopefully avoiding unnecessary costs.

I am happy to note that Senate Bill 2100, authorizing the McGrath Creek construction, was reported out of the Committee on Environment and Public Works on March 29, 1988. We believe that the 1.6 benefit-to-cost ratio coupled with the overwhelming local support for the project and the need to properly coordinate ongoing construction activities makes it highly desirable to include $500,000 for continued planning and engineering for this project in the fiscal year '89 budget.

We thank the Committee for their time and may we answer any questions?



McGRATH CREEK WATERSHED

Figure 1

TRINITY RIVER BASIN PROJECTS, TEXAS

JOHN M. STEVENSON, CHAIRMAN, TRINITY IMPROVEMENT ASSOCIATION

Senator DECONCINI. We will now hear from the Trinity River Basin project, Mr. John Stevenson, chairman.

Gentlemen, due to time constraints here, everyone has been most gracious in moving their testimony along. We are running a little bit later than we thought and we would ask that you be as brief as possible. Your full statements will appear in the record.

Mr. Stevenson.

Mr. STEVENSON. Taking the lead from Congressman Brooks, where there seems to be an inverse relationship to verbosity and funding, I will make this minimal.

My name is John Stevenson of Fort Worth, Tex.

Senator DECONCINI. Would you please introduce the other witnesses that you have at the table with you?

Mr. STEVENSON. I have Mr. John Evans to my left. If you would introduce yourself, and then each introduce yourself.

Mr. MATTOX. Bob Mattox of Crockett, Tex.

Mr. GIBBONS. I am Stewart Gibbons of Houston, Tex., chairman of the chamber of commerce infrastructure subcommittee.

Mr. STEVENSON. Each of these gentlemen will be speaking briefly on a separate matter of interest to their own areas.

Before I get into the overall comments that I have been asked to make, I would like to report with great sadness and advise you all of the death, Saturday night in Dallas, of our long-time president of the Trinity Improvement Association, Mr. Russell Perry, who was a long-time Dallas businessman and civic leader and has appeared before this committee on many previous occasions. I know you join with us in our sadness.

I have been asked to serve as spokesman of the delegation which represents interests from throughout the Trinity River basin, the city of Houston, which is outside the basin but receives water from it, numbering 61 persons, and I won't ask them to stand again. The delegates include mayors, council members, officers of river authorities, water districts, port and water utility managers, chambers of commerce, and other service organization officials.

You have heard from Congressman Brooks concerning some of our needs. Because these projects create the infrastructure on which our quality of life and our economic growth depend, we support this budget generally. We endorse a number of projects specifically and we will ask you to consider some additions to the budget estimates.

A summary of projects which we specifically support appears at the beginning of our written testimony. It itemizes the fiscal year 1989 budget request for $62,868,000 for 17 projects affecting the Trinity basin as listed for the Corps of Engineers.

We also have additional funding requests. For the Cooper Lake project, we recommend funds be appropriated for acquisition of lands for mitigation purposes.

For Wallisville—and Congressman Brooks spoke vehemently in support of this project—the question still remains whether this is to continue to be a federal project or whether funding is to become totally a local responsibility. A reaffirmation of congressional intent to complete this project is sought.

We seek funds for comprehensive flood control studies in the Dallas/Fort Worth metroplex, along the upper Trinity River and tributaries. A recent Corps of Engineers regional environmental impact statement warns of the dangers of catastrophic flooding if the flood plains are developed as is projected. Because the regional EIS did not identify the remedial flood control measures that are going to be needed, a flood control study by the Corps is necessary. Background information in support of this need is also included in the materials which we have supplied to the committee.

Mr. Chairman, I wish to submit for the record a complete list of our delegation appearing here today and copies of the testimony to be given by our group.

With these remarks, I would like to call on a few members of our delegation to speak briefly on projects of specific concern. The first speaker will be Mr. Bob Mattox, president of the Trinity River Authority of Texas.

[The statement follows:]

Statement of the Trinity Improvement Association

My name is John M. Stevenson of Fort Worth, Texas, and I am Chairman of the Trinity Improvement Association. I have been asked to serve as spokesman for this delegation which represents interests from throughout the Trinity River Basin and the City of Houston, which is outside the basin but receives water from it. Numbering 61 persons, the delegates include mayors and council members, officers of river authorities and water districts, port and water utility managers, chambers of commerce and other service organization officials. I might add that all have traveled to Washington at their own expense, our Association serving as coordinator. While the group is diverse geographically, we are united in purpose.

You have heard testimony from our Congressional representatives concerning some of our needs. We want now to present specific comments and recommendations on the FY 1989 budget proposals. With regard to the Fiscal Year 1989 budget for civil works projects for the Corps of Engineers, we note that the nationwide budget request for a total of $3.317 billion represents an increase of only 1.5% over the comparable figure requested for FY 1988. Because these projects create the infrastructure on which our quality of life and economic growth depend, we support this budget generally, we will endorse a number of projects specifically and we will ask you to consider some additions to the budget estimates.

A summary of projects which we specifically support appears at the beginning of our written testimony. It itemizes the FY 1989 budget request for $62,868,000 for 17 projects affecting the Trinity basin as listed for the Corps of Engineers. The Corps request for Trinity Basin projects is an increase of only $74,000 as compared to the FY 1988 budget request. O & M costs are up some $1.7 million, this due to increases in the costs of maintaining previously completed projects. Construction estimates are down also by about $1.7 million as Lakes Joe Pool and Ray Roberts come closer to completion.

We also have additional funding requests. For the Cooper project, we recommend funds be appropriated for acquisition of lands for mitigation purposes so as to carry out the terms of the

ENVIRONMENTAL IMPACT STATEMENT FOR MITIGATION CONTEMPORANEOUS WITH CONSTRUCTION.

FOR WALLISVILLE, THE QUESTION STILL REMAINS WHETHER THIS IS TO CONTINUE TO BE A FEDERAL PROJECT OR WHETHER FUNDING IS TO BECOME TOTALLY A LOCAL RESPONSIBILITY. LEGAL BARS TO CONSTRUCTION HAVE BEEN OVERCOME SINCE WE LAST APPEARED BEFORE YOU. NOW, THE ARMY HAS APPARENTLY WITHDRAWN ITS SUPPORT. A REAFFIRMATION OF CONGRESSIONAL INTENT TO COMPLETE THIS PROJECT IS SOUGHT.

WE SEEK FUNDS FOR COMPREHENSIVE FLOOD CONTROL STUDIES IN THE DALLAS/FORT WORTH METROPLEX ALONG THE UPPER TRINITY RIVER AND TRIBUTARIES. A RECENT CORPS OF ENGINEERS REGIONAL ENVIRONMENTAL IMPACT STATEMENT WARNS OF THE DANGERS OF CATASTROPHIC FLOODING IF THE FLOODPLAINS ARE DEVELOPED AS IS PROJECTED. BECAUSE THE REGIONAL EIS DID NOT IDENTIFY THE REMEDIAL FLOOD CONTROL MEASURES THAT ARE NEEDED, A FLOOD CONTROL STUDY BY THE CORPS IS NEEDED. BACKGROUND INFORMATION IN SUPPORT OF THIS NEED IS INCLUDED IN THE MATERIALS WHICH HAVE BEEN SUPPLIED TO THE COMMITTEE.

MR. CHAIRMAN, I WISH TO SUBMIT FOR THE RECORD A COMPLETE LIST OF OUR DELEGATION APPEARING HERE TODAY AND COPIES OF THE TESTIMONY TO BE GIVEN BY OUR GROUP.

WITH THESE REMARKS, I WOULD LIKE TO CALL ON A FEW MEMBERS OF THE DELEGATION WHO WILL SPEAK BRIEFLY ON PROJECTS OF SPECIFIC CONCERN TO THEIR AREAS.

SUMMARY OF REQUESTS - FY 1989

On behalf of the Trinity River of Texas delegation, the Trinity Improvement Association recommends the support of Congress for the following projects of the Corps of Engineers in considering the Energy and Water Development appropriation bill for FY 1989.

FUNDING REQUESTS:

PROJECT	BUDGET REQUEST
SURVEYS	
Dallas Floodway, TX	$ 75,000
Denison Dam - Lake Texoma, OK and TX	$ 250,000
PRECONSTRUCTION ENGINEERING AND DESIGN	
Five Mile Creek, Dallas, TX	$ 150,000
CONSTRUCTION	
Cooper Lake and Channels, TX	$21,800,000
Joe Pool Lake, TX	$ 4,500,000
Ray Roberts Lake, TX	$20,000,000
OPERATIONS & MAINTENANCE	
Bardwell Lake TX	$ 999,000
Benbrook Lake, TX	$ 1,145,000
Denison Dam - Lake Texoma, OK and TX	$ 3,687,000
Grapevine Lake, TX	1,971,000
Joe Pool Lake, TX	$ 325,000
Lavon Lake, TX	$ 1,859,000
Lewisville Dam, TX	$ 3,148,000
Navarro Mills Lake, TX	$ 1,331,000
Ray Roberts Lake, TX	$ 390,000
Trinity River & Tributaries, TX	$ 1,000,000
Wallisville Lake, TX	$ 238,000

ADDITIONAL FUNDING REQUESTS:

COOPER PROJECT

It is requested that additional funds be provided to proceed with mitigation land acquistion in accordance with the approved environmental impact statement and agreements with federal agencies.

WALLISVILLE PROJECT

It is requested that funds be appropriated for Wallisville construction in the amount of the Corps of Engineers capability expressed last year.

FLOOD CONTROL STUDIES, UPPER TRINITY BASIN

It is requested that funds be provided to proceed with studies of flood control needs for the Fort Worth Floodway and the West Fork and Elm Fork, Trinity River, floodways.

STATEMENT OF ROBERT MATTOX, PRESIDENT, TRINITY RIVER AUTHORITY

Mr. MATTOX. Thank you, sir. We have filed a detailed statement, so I will just summarize.

Joe Pool Lake is a new lake in the metroplex of Fort Worth and Dallas. We, as the local sponsor, endorse the proposed appropriation of $4.5 million. These funds will largely be used to complete the recreational development and that can't happen too soon. The anticipated demand and expressed public interest has been tremendous and we urge this committee's support for the requested appropriation.

As to Wallisville, Congressman Brooks expressed just exactly what my statement was, and I might add, probably more effectively. I will just conclude by saying that the local sponsors have more than honored their obligation inthis project. That thing has been going on long enough that the people of voting age in Texas know about Wallisville, it has been going on 21 years. We feel that it is now time for the federal government to honor its part of the deal.

Again, we thank the committee for the opportunity to testify before you today. We appreciate the federal dollars which remain available for the people of the Trinity River basin.

Thank you.

[The statement follows:]

Statement of the Trinity River Authority

I am Bob Mattox of Crockett, Texas. I am a member of the Board of Directors of the Trinity River Authority of Texas (TRA) representing Houston County and currently serve as President of the Board of Directors.

TRA supports the FY 1989 funding capabilities for the U.S. Corps of Engineers projects for which we serve as local sponsor.

Joe Pool Lake

Joe Pool Lake in southwest Dallas County has been filling with water since January 1986 and the public is eager to begin using the recreation features of this lake. The first opportunity for recreation use should come this summer when it is anticipated that the first park facilities will become available for public use.

TRA, which is the local sponsor for this most important Corps of Engineers lake, strongly endorses the proposed appropriation of $4.5 million for FY 1989. These funds will be largely used to complete recreational development and that can't happen a minute too soon. The anticipated demand and expressed public interest has been tremendous and we urge this Committee's support for the requested appropriation.

Wallisville Saltwater Barrier

The Wallisville Saltwater Barrier was freed from its legal impediments by an Appellate Court decision in 1987 and funded for construction by Congress in 1988. The Secretary of the Army, however, took it upon himself to compromise the sanctity of long-term contracts with the federal government by refusing to release the 1988 appropriation until the local sponsors renegotiate a new contract requiring 100 percent local financing.

The Trinity River Authority, along with Houston and the Chambers-Liberty Counties Navigation District, have responsibility as local sponsors for this much delayed and maligned project. We request this Committee's continuing support for Wallisville in two specific areas.

First, and most importantly, Congress needs to remind the Corps of Engineers that a deal is a deal and that trying to coerce the increasingly hard pressed local sponsors for Wallisville into new contracts is like rubbing salt in a wound. TRA requests that specific language be included in this appropriation bill directing the Corps to comply with all terms of the 1967 local cooperation agreement signed by the Corps and local sponsors and to allow construction to commence immediately.

Our second request is that funds be appropriated for Wallisville construction in the amount originally expressed last year. It is our belief that a clearly expressed intent of Congress with regard to Wallisville contracts, and a reasonable level of funding will be the two mechanisms to get this most important federal water project back into motion.

Upper Trinity River Flood Control Studies

A total of $75,000 under the caption of Dallas Floodway has been budgeted for additional studies on flooding in the Dallas/Fort Worth metropolitan area. Addditional funds need to be committed by Congress to investigate appropriate flood control techniques that will be required along the Clear Fork, West Fork, Elm Fork and main stem of the Trinity River in years to come.

Extensive upstream development has reduced the level of protection provided by existing structural flood control measures. A patchwork of river bottom developments have occurred or are planned for unprotected areas and need to be examined in the total context of available alternatives to insure the integrity of this valuable flood project. An adequate appropriation will produce a comprehensive plan that allows the Dallas/Fort Worth area to avoid the pitfalls of a piecemeal approach toward planning the uses of the upper Trinity River floodplain.

Operations and Maintenance

The Corps of Engineers has requested, and TRA endorses, appropriatons for operation and maintenance funds in the following amounts for the projects we currently support as local sponsor:

Project	1989 Amount
Bardwell Lake	$ 999,000
Joe Pool Lake	325,000
Navarro Mills Lake	1,831,000
Wallisville Project	238,000
Trinity River & Tributaries	1,000,000

Conclusion

Again, we express our appreciation for the opportunity to testify before you today. We sincerely appreciate the federal dollars which remain available for the people of the Trinity River basin.

WALLISVILLE LAKE, TEX.

STATEMENT OF STUART GIBBONS, PAST PRESIDENT, HOUSTON CHAMBER OF COMMERCE INFRASTRUCTURE COMMITTEE

Senator DECONCINI. Thank you.

Mr. STEVENSON. Next, Mr. Chairman, will be Mr. Stew Gibbons representing the Houston Chamber of Commerce.

Mr. GIBBONS. Mr. Chairman and members of the committee, my name is Stewart Gibbons, and I am the immediate past chairman of the Houston Chamber's infrastructure committee, and I am speaking today as the chamber's official representative.

During my tenure with the infrastructure committee, we completed an in-depth, 6-month study of the Wallisville saltwater barrier that allowed us to develop a clear-cut position in support of completing this most important and long-delayed project.

In summary, the position has three major points. The first is that Houston has to convert from well water to surface water to combat subsidence and to grow, and Wallisville does that, increasing the city's surface water supply equivalent to the current residential use in Houston. The second is that the cost of water through this method is far cheaper than any other alternative. The third is aimed at developing an operating plan for this small project which would work with nature in all its variations as found in the Wallisville area.

This carefully determined position is based on a thorough review of the environmental impact information available about the project and our conclusion that the environmental impacts can be managed by an effective operating plan.

Wallisville is a low-cost, low-impact water supply alternative that genuinely deserves to be built by the federal government. We request that this committee allow Wallisville to become a reality by including language in the fiscal 1989 appropriations bill directing the Secretary of the Army to comply with all terms of the existing contract between the Corps and local sponsors. We also request the restoration of construction funding in the amount originally expressed in last year's budget.

Houston has a desperate need for additional supplies of surface water and Wallisville represents a very substantial and logical way to proceed. Thank you for your attention and we sincerely request your support.

Senator DECONCINI. Thank you, Mr. Gibbons.

Mr. STEVENSON. The next statement, Mr. Chairman, will be made by Mr. Greg Patton, the president of the Joe Pool Lake Planning Council.

JOE POOL LAKE, TEX.

STATEMENT OF GREG PATTON, PRESIDENT, JOE POOL LAKE PLANNING COUNCIL

Mr. PATTON. Thank you very much, Mr. Chairman.

I will make this very brief. We have come to say thank you very much for your support in the past with our project. It is just about complete, and we need only one other helping hand, and I don't think you can help us with that one. We need some rain and a lot of it down there to fill the lake up.

I would like to take one second to ask the people of the Joe Pool Lake support to hold up their hand back here. These are people who have been making this trip for many years, for about 25 years. They represent the cities of Grand prairie, Duncanville, and Cedar Hill. We thank you very much for your support.

Senator DECONCINI. Thank you. We welcome their being with us, Mr. Patton.

[The statement follows:]

STATEMENT OF THE JOE POOL LAKE PLANNING COUNCIL

My name is Greg Patton and I am again addressing you as president of the Joe Pool Lake Planning Council.

Our citizens' organization has actively supported Joe Pool Lake for over 23 years, since before it was authorized for construction by Congress in 1965. We would like to express our sincere appreciation for this committee's visionary support over the years and to offer our assurance that this is one of the best investments the federal government has ever made.

An additional $4.5 million has been recommended for the FY 1989 budget that will be primarily spent on recreation development. The planning council requests your support for this appropriation. These funds will be essential in order to satisfy the substantial public demand for recreation at Joe Pool Lake.

Thank you for your attention to our comments.

HOUSTON SHIP CHANNEL, TEX.

STATEMENT OF ERNIE YIESCHANG, PRESIDENT, PORT OF LIBERTY, TEX.

Mr. STEVENSON. The next speaker will be Mr. Ernie Zieschang, president of the Port of Liberty.

Mr. ZIESCHANG. Mr. Chairman and members of the committee, my name is Ernie Zieschang and I am speaking today as a representative of the Port of Liberty.

The Port of Liberty is located approximately 50 barge miles from the Houston ship channel and 75 barge miles from the Intercoastal Waterway.

Navigation of the lower Trinity is done on a run-of-the-river basisand the Corps of Engineers maintenance dredging of the channel is of utmost importance in allowing access to our port.

In order to sustain our current economic recovery and industrial development, we strongly urge this committee's support for the proposed $1 million included in the appropriations bill for Trinity River and tributaries maintenance dredging.

As Congressman Brooks stated earlier, the Wallisville project remains in limbo because of about 14 years of legal problems. Its funding has been held up. We strongly support the funding for the construction of Wallisville because it is so vitally needed not only for water resources, but for navigation up to the Port of Liberty.

Please help us past this bureaucratic obstcle by including language directing the Corps of Engineers to honor the existing project contracts and to resume construction on Wallisville as soon as possible.

Thank you for your attention to our request and your long-term support for our projects in the lower Trinity Basin.

Senator DECONCINI. Thank you,.

Mr. STEVENSON. Next, Mr. Chairman, I would like to introduce John Evans who is mayor pro tem of the city of Dallas.

RAY ROBERTS LAKE, TEX.

STATEMENT OF JOHN EVANS, MAYOR PRO TEM, CITY OF DALLAS, TEX.

Mr. EVANS. Thank you.

Mr. Chairman, my name is John Evans and I am mayor pro tem of the city of Dallas, and I am here today representing the cities of Dallas and Denton concerning the Ray Roberts Lake project.

We would implore you to allow us to complete this very much needed project for our water supplies of approximately 76 million gallons a day, for recreation, and for flood control.

I would also like to reinforce, having served the North Central Council of Governments, in the environmental impact statement, the Corps did a good job in the prelininary work, but we need additional studies on the REIS so that we know exactly where we stand.

I would ask you also to fund—I am almost embarrassed to say—$75,000, since they have been talking about millions today, for the Dallas floodway that is currently under study.

I urge you to continue to look at our area and help us, as you have in the past, and for this I express our appreciation.

Senator DECONCINI. Thank you.

[The statement follows:]

Statement of the City of Dallas, TX

My name is John Evans and I am mayor pro tem for the city of Dallas. Let me express my appreciation as well as that of the city councils of Dallas and Denton for your committee's continued support for the Corps of Engineers efforts on the Ray Roberts Lake project.

My testimony today is presented on a two-fold basis. First, on behalf of the cities of Dallas and Denton, I request that President Reagan's 1989 budget request for the Ray Roberts Lake project be accepted and supported by this committee. The cities are the co-sponsors of this project and have contracted with the Corps of Engineers for the design and construction of this project in order to obtain a water supply of 76 million gallons per day. This project is necessary to provide a source of water supply, recreation and flood protection for existing as well as future citizens.

Since we last appeared before this committee in March 1987, construction of the dam and outlet works has progressed satisfactorily and the Corps began deliberate impoundment in July 1987.

Funding requested includes $20 million for continued project construction. With your approval of this funding, the project can remain on schedule and construction of the reservoir, road and railroad relocations, design of recreational facilities and land acquisition can continue. Any cut-backs could mean a delay in the timely completion of this project which could hamper us greatly in meeting the water needs of our region. Also, as you know, when the project is completed, the local sponsors will begin repaying, with interest, the money advanced by the federal government. It is anticipated the first payment will be due in the fall of 1988. Any delay in this project will of course delay that repayment.

I would also like to express the need for additional studies as a follow-on to the Regional Environmental Impact Statement which was prepared by the Corps of Engineers for the Dallas/Fort Worth metroplex last fall. It warned of the potential danger of catastrophic flooding which could take place in our area resulting from a standard project flood occuring on the upper Trinity River and tributaries. Re-evaluation of the Dallas Floodway is currently underway, and there is a request for $75,000 in the FY 1989 budget estimates to continue this project. Re-evaluation of the Elm Fork, West Fork and Fort Worth Floodways is also needed but has not been funded.

I urge your careful consideration of the administration's budget request for full funding of the Ray Roberts Lake project, the Dallas Floodway re-evaluation, as well as the additional funding for the Floodway re-evaluations. I look forward to your continued cooperation in this important matter.

FORT WORTH FLOODWAY, TEX.

STATEMENT OF GAREY GILLEY, COUNCIL MEMBER, CITY OF FORT WORTH, TEX.

Mr. STEVENSON. The next speaker will be Garey Gilley, council member from the city of Fort Worth.

Mr. GILLEY. Mr. Chairman and members of the committee. My name is Garey W. Gilley, and I am a member of the city council of Fort Worth, Tex.

Although parts of Texas are classified as being water deficient, torrential rain storms can and do occur and cause catastrophic flooding. Fort Worth and other cities located on the upper Trinity River have experienced disastrous floods in the past.

Following the flood of 1949, which inundated low-lying areas, a federally financed floodway to protect the central part of Fort Worth was completed in 1967, some two decades ago.

A reappraisal of the Fort Worth floodway under current conditions was completed by the Corps of Engineers in late 1987. The report found that due to changed conditions this floodway no longer provided adequate protection against a standard project flood.

Today, standard project flood discharges are significantly larger than the ones used to design that project. The increased discharges would reduce the freeboard on the Fort Worth levies to zero, whereas 4 feet of freeboard is necessary for safety.

This study would further indicate that nowadays a standard project flood would impact some 22,000 people in the low-lying areas of Fort Worth and cause damages estimated to range between $787 million and $1.05 billion.

The Corps report estimated that $400,000 would be required to adequately define the flood control corrective work necessary. We had hoped that the administration wouldd request funds for this Fort Worth floodway restudy in its fiscal year 1989 budget, but this was not the case. It is, therefore, respectfully urged that this committee add planning funds to this appropriation bill for this purpose.

Other have and will speak to you regarding the need for flood control planning funds in other parts of the Fort Worth/Dallas metroplex, and we support their request also.

We want to thank you for this opportunity to present and voice these concerns to you. Thank you.

Senator DECONCINI. Thank you, Councilman.

COOPER LAKE, TEX.

STATEMENT OF HARRY WHITE, JR., COUNCIL MEMBER, CITY OF IRVING, TEX.

Mr. STEVENSON. The final statement will be made, Mr. Chairman, by Harry White, Jr., council member from the great city of Irving, Tex.

Mr. WHITE. Thank you, Mr. Chairman and members of the committee. My name is Harry White and I speak on behalf of the city council of Irving, Tex. I also represent the Sulphur River Municipal Water District and the North Texas Municipal Water District and their interest as local Sponsors for water supply, and the construction of Cooper Lake project in Texas.

The delay by federal courts in this project from 1971 tp 1984 has created many, many problems for the local sponsors. Each of the individual entities have been required to expend significant sums to provide temporary sources of water that would not have been necessary had Cooper not been delayed. We are pleased to note that the Corps of Engineers is moving expeditiously and is ahead of schedule in the resumption of the construction of this project.

We, as the local sponsors, are here today to support the testimony of the Corps of Engineers and the need for $21.8 million as the capability for construction, but request that an additional $4 million be provided to proceed with the mitigation land acquisition in accordance with the approved environmental impact statement and agreements between the federal agencies. This money is necessary to start to implement mitigation requirements which should be completed along with the project.

Our city continues to grow and now has a populationoff 160,000. The North Texas Municipal Water District serves in excess of 750,000 persons, and the Sulphur River Municipal Water District serves an area containing 30,000 peolpe. We are appreciative of your past support of this project and have faith that you will give full consideration to this request.

I would like to take this opportunity to briefly speak to the recent development along the Elm and West Forks of the Trinity River. The city of Irving occupies land located at the confluence of the two river forks and, as a result, is inordinately affected by flooding.

The U.S. Army Corps of Engineers has completed a study which has made local governments and citizens along the two river forks aware of the catastrophic loss of life and property which will happen upon the occurrence of a standard project flood. This study, called the Trinity corridor regional environmental impact statement, or REIS, does not provide for examination of any possible solutions to the impending disaster.

It is with the spectre of disaster looming over us that we urge the authorization of funding for the Corps of Engineers to perform a full reconnaissance type study. This study must examine the extent and cost of necessary flood control works which must be done to protect the lives and property along the two forks of the Trinity.

You have heard requests to study the Fort Worth and Dallas floodways. In my opinion these studies are necessary. However, there is an urgent need for a comprehensive study of the entire REIS area which would examine necessary flood control works and their associated costs. It is respectfully requested that necessary funding for this study be favorably considered.

Thank you for the opportunity to appear before you.

Senator DECONCINI. Thank you very much.

Gentlemen, this will suffice. We have to move on. Thank you very much.

Mr. STEVENSON. Thank you very much for the opportunity. Taking the lead from, and with all due respect to the great Governor of the great state of Arizona, the great state of Texas also looks forward to being the home of the Superconducting Super Collider. [Laughter.]

Senator DECONCINI. We understand that. Believe me, that doesn't go unnoticed here, I can assure you.

Before moving to the next witness, I see you have a list of the delegation present here and a statement related to regional flood protection. So, I want to include those in the record at this point.

[The information follows:]

REGIONAL FLOOD PROTECTION

Arlington, Carrollton, Coppell, Dallas, Farmers Branch
Fort Worth, Grand Prairie, Irving, Lewisville

Background

A Regional Environmental Impact Study (REIS) covering the Trinity River Floodplain in the Dallas/Fort Worth metroplex, released in November 1987 by the Army Corps of Engineers, provides information as to potential flooding that could occur under three different scenarios of floodplain development and two different levels of storm water flows. Designed as a tool to assist the Corps in evaluating applications for federal permits to build in the floodplain, the REIS reveals that some areas of the floodplain are subject to inundation by a Standard Project Flood (SPF) even if no more development is allowed to occur. If floodplain development continues at the level that planning officials of cities predict, nearly all the existing levees along the West Fork below Beach Street in Fort Worth and the Elm Fork below Lewisville Dam would be overtopped by an SPF, as would the levees of the Dallas floodway.

In the REIS, the three alternative scenarios of development are designated as follows: Revised Baseline (BSLN), Modified Floodway (MF), and Composite Floodway (CF). Development under the BSLN scenario would be limited to that already in place or authorized as of September, 1987. The CF scenario represents that level of development considered most likely to occur if each city independently follows its own zoning and building codes. The MF scenario represents a middle course which would be consistent with Federal Emergency Management Administration (FEMA) rules for flood insurance eligibility.

It should be noted that the Corps authority for Section 404 permits extends over only about 20% of the floodplain, the remainder being under local control, but subject to FEMA flood insurance eligibility rules. The floodplain included in the REIS totals 70,000 acres or about 110 square miles. Under the BSLN scenario, 64% of the floodplain would remain undeveloped; under the FM scenario, 54% would remain undeveloped; and under the CF scenario, 35% would remain undeveloped.

Two levels of flooding are examined in the REIS, a 100 year flood, which would have the frequency of occuring once in a hundred years, and a Standard Project Flood, a much larger flood which would result from the most severe combination of weather conditions that could be reasonably expected in a given area. The SPF has no designated frequency of occurence. An SPF could occur tomorrow if the critical weather conditions developed. Two storms of SPF proportions occurred in Texas during 1987, one in the area south of Houston. Flood control structures built by the federal government, such as levees, are designed to cope with an SPF.

Dallas

The volume of water flowing past a given point on a floodway in event of an SPF, varies with such factors as the degree of urbanization that has taken place upstream in the drainage area and, the location of the storm center. The Dallas floodway, the only federal flood control structure in the REIS area, was designed in the late 1940's to accomodate an SPF producing a flow of 226,000 cubic feet per second (cfs) at the Commerce Street river gauge in Dallas. A 1981 Corps study estimated that an SPF would result in a flow of 256,000 cfs at Commerce Street. The REIS SPF would result in a flow of 327,400 cfs at Commerce Street. Since both the 1981 and 1987 SPF estimates of flow clearly exceed the design capacity of the Dallas floodway, an estimate of the nature and cost of remedial action should be prepared by the Corps of Engineers so that protection of Dallas against an SPF could be re-established.

The draft REIS was criticized because of lack of data regarding economic benefits and costs related to each alternate development scenario. While the final REIS contains some economic data, it is far from complete. The benefits to be derived from each of the development scenarios includes only the net increases in municipal real property taxes after deducting the municipal capital and operating costs resulting from the additional area served with streets and utilities and services such as fire and police. Not included are the additional benefits resulting from such sources as new salaries, the provision of goods and services related to development, and sales taxes.

Similarly, the flood damages resulting from the various development scenarios appear to be grossly understated for the CF scenario. Even though the the Dallas levees would be overtopped by an SPF, no damages are estimated for the area behind the Dallas levees. A flow of 327,400 cfs is capable of inundating eight acres to a depth of one foot in one second or 480 acres in one minute. When a levee is overtopped, a breach quickly occurs. Water then seeks its own level, meaning that the water level in the area behind the levees will rise until it reaches the water level existing between the levees. Should such a catastrophe occur in Dallas, approximately 10,000 acres of land would be affected, representing 10% of the assessed real property value of the entire city.

It should be noted that the Corps has made a disclaimer that the benefits and damages should only be considered as relative and not absolute values and that it would be inconceivable that a situation would be allowed to occur in which the Dallas levees would be topped. However, the only improvement to the Dallas floodway which is currently programmed consists of a project to clean out and restore the low flow channel between the levees to its original capacity. In order to make sound decisions regarding allowable levels of floodplain development and necessary flood control improvements, it is necessary that a full range of economic data be available.

Arlington, Grand Prairie, Irving (West Fork Trinity River)

The plan for development of the Trinity River, authorized for construction by Congress in 1965, included the West Fork Floodway reach which extends from the upper end of the existing Dallas Floodway to the lower end of the existing Fort Worth Floodway, both federal projects. A 1981 Corps of Engineers report recommended no federal participation in the West Fork Floodway project because no structural or non-structural solution along this reach was found to be economically feasible.

Despite the lack of federal levees, development, including local levees and landfills has been taking place in the floodplain of the West Fork, since the mid-1970's under the authority of Section 404 permits. According to the REIS, a Standard Project Flood would overtop these levees under a Composite Future scenario, at 15 out of the 19 levee locations reported on, and the freeboard at the other four locations would be only one and one-half feet or less. The Corps designs four feet of freeboard above a standard project flood into its levees. Even under the Revised Baseline scenario, a Standard Project Flood would overtop levees at 7 of the 19 locations and there would be a freeboard of less then three feet at 6 more locations. Because of the interest in floodplain development along the West Fork, the feasibility of federal levees should be re-examined. It is believed that the West Fork Floodway would be subject to automatic deauthorization if no action is taken to proceed with it prior to 1991.

Carrollton, Coppell, Farmers Branch, Irving, Lewisville (Elm Fork Trinity River)

The Elm Fork Floodway reach, extending from the upper end of the Dallas Floodway to Lewisville dam, was also authorized as a federal project in 1965. The last time federal funds were expended on this project was in FY 1974, and it is thus subject to automatic deauthorization on December 31, 1989, unless it is reactivated. Work on the project was halted in 1974 due to lack of expression of local support.

As in the case of the West Fork, development in this reach of the Elm Fork has taken place and local levees have been built and land fills placed. A Standard Project Flood would, in the case of the Composite Future scenario, overtop levees at 13 of the 16 locations reported on, and have less than one foot of freeboard at another location. Only the levees of the DFW landfill are high enough to withstand a Standard Project Flood. Under the Revised Baseline scenario, 8 of the 16 levee locations would overtopped or have less than one foot of freeboard. Some of the locally built levees on the Elm Fork were designed to protect only against a 100-year flood, one of lesser magnitude than a Standard Project Flood. The feasibility of a federal floodway on the Elm Fork should be re-evaluated.

Fort Worth

Under the authority of Section 216, Public Law 91-611, and at the request of Tarrant County Water Control and Improvement District No. 1, the Fort Worth District, Corps of Engineers, prepared an appraisal report of the Fort Worth floodway and extensions.

The study focused on identifying the major flood hazard problems associated with the existing Fort Worth Floodway and Extension projects in an effort to determine whether further studies are warranted. Three primary areas of concern were identified. These included reduction of the freeboard on the levee system, insufficient sump capacities and recent developments occurring in the project area not protected by existing levees. It was determined that the SPF discharges are now significantly larger than those used to design the floodway. The increased discharge has reduced the freeboard on some levees to zero.

With full consideration given to the limited scope of this investigation, it was determined the potential for catastrophic losses to lives and property associated with levee overtopping and interior drainage flooding warrants more detailed study. It was estimated a Standard Project Flood event would impact as many as 22,000 people in the project area and cause damage estimated to range between $787 million and $1.05 billion.

The report recommends that further studies of the Fort Worth Floodway, West Fork Floodway Extension and Clear Fork Floodway Extension projects, Fort Worth, Texas, be conducted by the U.S. Army Corps of Engineers under the authority of Section 216 of Public Law 91-611.

General

Means to prevent overtopping not only the existing federal Dallas and Fort Worth floodway levees but also privately built levees protecting properties along the West Fork and the Elm Fork could range from restricting or prohibiting further development within the floodplain, to upgrading the existing levees and channels or constructing additional flood control storage facilities, or some combination of these. Under the auspices of the North Central Texas Council of Governments, the nine municipalities within whose jurisdictions the REIS floodplain lies are developing "Common Permit Criteria" which would apply to all future Trinity floodplain development. Compliance would be voluntary unless municipalities would be willing to bind themselves contractually. There is no single government agency at either federal, state or regional level currently having the authority to control development in the floodplain of all nine cities. Presumably one could be created by the Texas legislature, or, by each city contracting with a single agency to manage its floodplain development.

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1988 CONGRESSIONAL HEARINGS
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CORPUS CHRISTI SHIP CHANNEL, TEX.

STATEMENT OF HARRY C. PLOMARITY, EXECUTIVE DIRECTOR, PORT OF CORPUS CHRISTI AUTHORITY

ACCOMPANIED BY DALE MILLER, WASHINGTON REPRESENTATIVE, PORT OF CORPUS CHRISTI, TEX.

Senator DECONCINI. We will now hear from Mr. Harry Plomarity, executive director of the Port of Corpus Christi, and Mr. Dale Miller regarding the Corpus Christi Ship Channel. If they could summarize their statement, their full statement will appear in the record.

Mr. MILLER. Mr. Chairman, my name is Dale Miller, and I represent the Port of Corpus Christi in Washington. I have no statement of my own, but I want to associate myself with Mr. Plomarity's remarks.

Mr. PLOMARITY. Mr. Chairman and members of the subcommittee, my name is Harry Plomarity, and I am executive director of the Port of Corpus Christi, the local sponsor of the federally authorized Corpus Christi Ship Channel project. We appear before you today requesting that Congress appropriate the following funds which are included in the President's current fiscal year 1989 budget.

First, we respectfully request that $4 million be appropriated to deepen and widen the Corpus Christi Ship Channel from the Tule Lake turning basin through the Viola turning basin, the last reach of the ship channel not yet deepened pursuant to the authorization received in 1968.

Second, we request appropriation of $3.993 million to maintain the Corpus Christi Ship Channel to its authorized dimensions. These funds are included in the President's fiscal year 1989 budget.

Work completed to date permits approximately 80 percent of the waterway to be used by marine traffic requiring the authorized project depth.

Congressional appropriations have maintained the Port of Corpus Christi since it was opened to world commerce in 1926, and these appropriations were fully justified. However, future funding sources must continue to be available for financing future channel improvements as the need arises to accommodate larger vessels, increased traffic, and port commerce.

The Port of Corpus Christi is projecting a bright future as it continues to diversity the types of cargoes handled and as it broadens its cargo base. According to the latest Corps statistics, the Port of Corpus Christi now ranks second in commerce among Texas ports and among the eight largest ports in the nation in waterborne commerce handled.

Again, we appreciate the opportunity to appear before you today and we request your careful consideration to our request for appropriations. Thank you very much, Senator.

Mr. MILLER. Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF THE PORT OF CORPUS CHRISTI AUTHORITY

Mr. Chairman and Members of the Subcommittee:

My name is Harry G. Plomarity. I am Executive Director of the PORT OF CORPUS CHRISTI AUTHORITY of Corpus Christi, Texas local sponsor of the federally authorized Corpus Christi Ship Channel Project. This project is scheduled for completion in FY90-91.

REQUEST FOR FUNDS

I appear before you today requesting that the 100th Congress, 2nd Session, appropriate the following funds which are included in the President's current FY88-89 budget.

A. NEED TO CONTINUE DEEPENING DREDGING OF THE SHIP CHANNEL FOR ONE ADDITIONAL CHANNEL INCREMENT

Appropriate $4,000,000 to deepen and widen the CORPUS CHRISTI SHIP CHANNEL PROJECT, from the Tule Lake Turning Basin through the Viola Turning Basin, the last reach of the ship channel not yet deepened pursuant to the authorization contained in Senate Document No. 99, Public Law 483, dated August 13, 1968. Included in this project are appropriations of $540,000 to permit the Coast Guard to add the Aids to Navigation as a part of the project.

B. FUNDS FOR OPERATING AND MAINTAINING THE CORPUS CHRISTI SHIP CHANNEL TO ITS AUTHORIZED DIMENSIONS

Appropriate $3,993,000 to maintain the Corpus Christi Ship Channel to its authorized dimensions. These funds are included in the President's FY 88-89 budget.

AUTHORIZED BUT NOT COMPLETED SHIP CHANNEL IMPROVEMENTS

The following authorized improvements have yet to be completed:

A. Bids are scheduled to be received in May or June, 1989 to enlarge and deepen the Viola Channel and Turning Basin, the last reach of the channel to be brought to project depth.

B. The project still requires construction of levees, dikes, weirs, drainage structures and other items required to contain the dredged materials and return the effluent to the Viola Turning Basin. The contract was awarded to Midwest Construction Company on a bid of $3,677,869.50. Construction has been underway for some time and is now 47% complete.

C. Widening and deepening the Viola Channel and Turning Basin will complete deepening to the head of navigation at Mile 29.67. The last contract is scheduled to be completed in May, 1989.

DREDGING AND MAINTENANCE ACTIVITIES RELATED TO THE MAINTENANCE DREDGING OF THE 45-FOOT SHIP CHANNEL PROJECT

CONCLUSIONS:

A. CONSTRUCTION AND MAINTENANCE OF THE 45-FOOT PROJECT

Work completed to date permits approximately 80% of the waterway to be used by marine traffic requiring the authorized project depth. There are still pipelines under the channel which have been an impediment to dredging. They have been ordered out and work is pending.

Five public oil docks, one public grain elevator dock and a bulk loading dock have been constructed to accommodate deeper draft vessels. In addition six private oil docks have been modified or constructed to accommodate the deeper draft vessels.

B. OPERATION AND MAINTENANCE OF THE CORPUS CHRISTI SHIP CHANNEL

The Corps of Engineers has requested an appropriation of $3,993,000 to do routine maintenance dredging on the 45-Foot channel from Beacon 82 west through the Port's Main Turning Basin. They are also planning Hopper Dredge work through the jettied entrance off the Gulf.

C. APPROVAL OF OPERATION AND MAINTENANCE DISPOSAL SITES

A disposal plan acceptable to the Federal Agencies for deposit of the material generated by the dredging for widening, deepening and maintaining the Inner Harbor has been approved and filed with the Environmental Protection Agency. This plan will satisfy disposal requirements for at least twenty-five years.

D. RECONSTRUCTING THE SOUTH SHORE LEVEES

A contract for construction of the South Shore levees by the 4F Construction Corporation was completed in September, 1985, at a cost of $2,891,870.

E. LEVEES CONSTRUCTION AND DISPOSAL SITES PURCHASED FOR MITIGATION PURPOSES

Midwest Construction Company bid $3,677,869.50 to provide mitigation lands for disposal site purchased for the construction of levees, drainage ditches, weirs, etc., in the Suntide Disposal area. Construction is well underway and the project is about 47% complete.

F. DREDGING THE CHEMICAL TURNING BASIN AND THE TULE LAKE TURNING BASIN

Great Lakes Dredging and Dock Company was the low bidder for widening and deepening the Corpus Christi Channel from the Chemical Turning Basin westward to and including the Tule Lake Turning Basin. The contractor bid $6,178,707.06 which was below the government's estimate. A contract for completing the final reach of the waterway to the Viola Turning Basin at the head of navigation is scheduled for completion in May or June, 1989.

G. EROSION CONTROL CONTRACT ADJACENT TO THE NUECES BAY DISPOSAL SITE

As a result of the winds and waves action, serious erosion problems have occurred where the levees join Nueces Bay. The Corps of Engineers found it necessary in 1986 and 1987, to award an $189,000 contract to Kinchen Construction Company of Port Lavaca, Texas to rip-rap the shoreline and restore the levees to their original cross-sections.

H. A MAINTENANCE DREDGING CONTRACT IS SCHEDULED TO BE AWARDED TO RESTORE THE INITIAL REACH OF THE CORPUS CHRISTI SHIP CHANNEL

Plans and specifications are being prepared and bids are scheduled to be received in May or June, 1989 to restore the outer bar and jetty channels to their project depths and widths. This contract is scheduled for completion in FY90.

I. INCREASED TRAFFIC AT THE PORT OF CORPUS CHRISTI

Beginning in about 1978 because of worldwide economic conditions and other factors, waterborne commerce and traffic declined at the PORT OF CORPUS CHRISTI. These declines also occurred in most world ports. In recent years, however, port commerce has shown a steady growth, reaching 59,705,680 tons in 1987. To date the 1988 Port tonnage is well ahead of the same period in 1987.

J. NECESSITY TO INCREASE CONGRESSIONAL APPROPRIATIONS FOR OPERATING AND MAINTAINING THE CORPUS CHRISTI SHIP CHANNEL

Congressional appropriations have maintained the PORT OF CORPUS CHRISTI since it was opened to world commerce in 1926.

K. NEED TO CONTINUE FUNDING OF THE CORPUS CHRISTI SHIP CHANNEL PROJECT

However, future funding sources must continue to be available for financing future channel improvements as the needs arise to accommodate larger vessels, increased traffic and port commerce.

(1) When completed in FY90 the Corpus Christi Ship Channel Project is projected to cost $68,650,000.
(2) Pipeline relocations are expected to cost $4,540,000.

L. ESTIMATED CONSTRUCTION COSTS FOR ADDITIONAL LAYBERTHS NEAR PORT INGLESIDE, TEXAS WHICH COSTS ARE NOT INCLUDED IN THE OPERATION AND MAINTENANCE EXPENDITURES

These expenditures do not include estimated construction costs to add additional layberths near Port Ingleside, Texas.

However, under the Corps of Engineers' current policy (HB6) layberths construction costs are shared jointly by the Port Authority and the Federal Government.

Several major Port improvement projects are presently under construction. These projects which are rapidly being completed include the following expenditures: (A) Foreign-Trade Zone; (B) Corpus Christi Homeport at Ingleside, Texas: (C) Container Terminal Yard: (D) Joint sharing of O & M Federal expenditures: (E) Joint sharing in the maintenance costs of the Gulf

Intracoastal Canal between Brownsville and Orange, Texas is a joint responsibility of the Corps of Engineers and the State Department of Highways and Public Transportation.

M. NEED FOR FOREIGN TRADE ZONE IN NUECES COUNTY AND SAN PATRICIO COUNTIES

Corpus Christi's Foreign-Trade Zone, was the first zone authorized within the Continental limits of the United States that included oil refineries. It is expected to accommodate both liquid and dry cargoes for vessels having loaded drafts in excess of 40 feet.

N. SITE LOCATION FOR THE NAVY'S HOMEPORT - ON THE CORPUS CHRISTI SHIP CHANNEL NEAR INGLESIDE, TEXAS

The Corp of Engineers has issued Corp permits to the Navy to allow the construction of Homeport to proceed. Projected to be berthed at Homeport in 1991 will be the battleship Wisconsin, aircraft carrier Lexington, a destroyer, a cruiser, a mine sweeper and several general purpose vessels.

O. CONSTRUCTION OF CONTAINER YARD - DRY CARGO DOCK NO. 15

Construction of a container yard for handling cargoes which previously could not be accommodated at the Port of Corpus Christi is now completed and in service.

TABLE NO. 1

NECESSARY OPERATION AND MAINTENANCE EXPENDITURES REQUIRED TO MAINTAIN THE GULF INTRACOASTAL WATERWAY FROM TEXAS TO FLORIDA

U. S. CORPS OF ENGINEERS, GALVESTON, TEXAS
WATERBORNE COMMERCE - FIVE TEXAS LEADING PORTS

RANKS		YEAR-1985	YEAR-1984
1	Houston	90,669,169	96,777,619
2	Corpus Christi	41,057,318	44,081,101
3	Beaumont	26,842,008	33,004,372
4	Texas City	33,440,917	30,656,673
5	Port Arthur	15,754,931	16,430,368
TOTAL TEXAS PORTS - BOTH DEEP DRAFT AND SHALLOW DRAFTS:		245,959,297	263,921,559
Gulf Intracoastal Waterway Traffic:			
Sec. 1. (Sabine River to Galveston)		42,443,030	43,810,015
Sec. 2. (Galveston to C. C.)		22,937,710	20,991,540
Sec. 3. (C.C. to Mexican Border)		2,128,564	1,877,348
(TOTAL SHORT TONS) (1)		67,509,304	66,678,903

TABLE NO. 2

PORT OF CORPUS CHRISTI SHIP AND BARGE ACTIVITIES
WITHIN THE INNER HARBOR
JANUARY THROUGH DECEMBER, 1987

TANKER SHIPS.....	679		
CARGO SHIPS.....	149		
OTHER SHIPS.....	64		
TOTAL TANKER SHIPS AND CARGO SHIPS	892		
TANKER BARGES.....		3963	
CARGO BARGES.....		253	
TOTAL TANKER BARGES AND CARGO BARGES		4216	
TUGS.....			2270
TOTAL TUGS			2270

GRAND TOTAL TRAFFIC FOR 1987 7378

COMMERCE AND VESSEL TRAFFIC INCLUDED IN FY88-89 APPROPRIATIONS

New Orleans Studies:.....	$ 425,000
Capital Funds, Coast Guard.....	540,000
Construction Funds	4,000,000
O&M Corpus Christi Ship Channel.....	3,993,000
Chocolate Bayou.....	1,180,000
O&M GIWW.....	8,034,000
O&M Victoria Channel.....	1,930,000
Mouth of the Colorado River.....	$ 2,200,000
GRAND TOTAL OF APPROPRIATIONS.....	$ 22,302,000

PREPARED STATEMENT OF TEXAS WATER DEVELOPMENT BOARD

Senator DECONCINI. Now, before turning the hearing over to Senator Specter, I am informed that the Texas Water Development Board has submitted a statement on several Texas projects. Those will be place in the record at this time.

[The statement follows:]

STATEMENT OF THE TEXAS WATER DEVELOPMENT BOARD

U.S. ARMY CORPS OF ENGINEERS INVESTIGATIONS AND PROJECTS IN THE TRINITY RIVER BASIN OF TEXAS

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

LITTLE FOSSIL CREEK, HALTOM CITY, TEXAS

In 1982, the City of Haltom City, Texas requested a flood damage protection study on Little Fossil Creek which is located in an urbanized area northeast of Fort Worth, Texas. The City has indicated an understanding of the current cost-sharing policy as it pertains to feasibility studies by the Corps of Engineers and is willing to act as local sponsor. A reconnaissance-level study of ways to protect this flood-prone area was initiated in FY 87 and is scheduled for completion in this fiscal year. The Board supports the President's budget recommendation of $75,000 for FY 89 for the feasibility phase for the Little Fossil Creek flood damage protection study.

RAY ROBERTS AND JOE POOL LAKES

Ray Roberts Lake, jointly sponsored by the Cities of Dallas and Denton, and Joe Pool Lake, sponsored by the Trinity River Authority of Texas, are included in the President's budget for FY 89 in the amounts of $20 million and $4.5 million, respectively. Both reservoirs are high priority projects because of rapid regional growth which is resulting in a need for additional water supply, flood control and recreation facilities which the lakes will provide. The Board requests the Committee's support for the budgeted amounts recommended by the President during FY 89 in order to continue scheduled construction of these projects.

OPERATION AND MAINTENANCE

The Board supports funding to the Corps of Engineers for operation and maintenance during FY 89 for the following projects located in the Trinity River Basin; Bardwell Lake ($999,000); Benbrook Lake ($1,145,000); Grapevine Lake ($1,971,000); Joe Pool Lake ($325,000); Lavon Lake ($1,859,000); Lewisville Dam ($3,148,000); Navarro Mills Lake ($1,331,000); Ray Roberts Lake ($390,000); and Wallisville Reservoir and Saltwater Barrier ($238,000). These amounts are included in the President's budget for FY 89.

CONCLUDING COMMENTS

The Texas Water Development Board requests Committee support of these regional water resource development needs. The Board most respectfully urges the appropriation of funds as requested in order to accomplish the coordinated, orderly development of urgently-needed water resources projects in the Trinity River Basin in the State of Texas.

BUREAU OF RECLAMATION INVESTIGATIONS AND PROJECTS IN TEXAS

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

BEDIAS LAKE PROJECT

The Board's planning work indicates that the Houston-Galveston metropolitan area will continue to grow rapidly and will therefore need additional firm surface-water supplies in the immediate future in order to avoid further reliance on ground-water resources. The area continues to experience serious land subsidence problems due to heavy ground-water pumpage. Bedias Lake has been identified as a potential water supply project for the area and has been included in the State's plan for development since the middle 1960's. The Lake has been included as an element of a "continuing" plan to supply water for municipal and industrial purposes in the lower Trinity River Basin. The future water requirements of the metroplex in excess of needs which can be met by local supplies can be partially met from Bedias Lake.

The President has included in his FY 89 budget proposal $875,000 to prepare a Planning Report/Draft Environmental Impact Statement which will complete the Plan Formulation Phase of a study program by the Bureau of Reclamation to investigate the hydrologic and economic feasibility of Bedias Lake. The future water supply needs of the Lower Trinity River Basin are increasing and we strongly urge your consideration of the amount included in the President's budget for FY 89 for the Bedias Lake study.

SAN JACINTO RIVER PROJECT

The San Jacinto River Basin and neighboring areas continue to grow rapidly. Much of the area has depended upon ground water to satisfy its municipal and

industrial water needs in the past. The result has been a significant lowering of water levels within the area and severe land subsidence. Subsidence problems are extremely serious in that subsidence has aggravated local area drainage and flooding problems and also subjects the people and property of this region to tidal surges during hurricanes.

The Board's projections indicate that additional surface water supplies will be needed in the mid-1990's in order to meet the growing demands for municipal and industrial water. Thus, the Board urges the Committee appropriate $870,000 for the Bureau of Reclamation to continue advanced planning for Lower Lake Creek Reservoir in FY 89.

LOWER COLORADO RIVER BASIN TOTAL WATER MANAGEMENT STUDY

Water supplies in the study area are not adequate to meet future needs. Although there are potential surface- and ground-water sources which could be developed, it is possible that existing supplies could be better utilized by conjunctive use of surface and ground water and by implementation of conservation measures. This investigation will develop information needed to assist management in making decisions on present and future water requirements.

This study is supported by the Texas Water Development Board and the Lower Colorado River Authority. The President's FY 89 budget recommends an appropriation of $50,000 to fund this study. The Board supports this request.

NUECES RIVER PROJECT

A total of $1,000,000 is included in the President's FY 89 budget for construction of recreation facilities and fishery management activities for the Nueces River Project. The Board supports the President's recommendation for funding in FY 89.

PALMETTO BEND PROJECT

A total of $665,000 is included in the President's FY 89 budget to continue construction of the Palmetto Bend Project. The Board supports the President's recommendation for funding in FY 89.

SMALL PROJECT LOAN PROGRAM

The Board supports the President's recommended funding during FY 89 of $2,000,000 to the Hidalgo County Irrigation District No. 1 small reclamation project.

CONCLUDING COMMENTS

The Texas Water Development Board sincerely appreciates this opportunity to provide testimony to the Committee and most respectfully urges the appropriation of funds as requested in order to accomplish properly coordinated, timely, and orderly development of these urgently needed water resource projects in the State of Texas.

TEXAS WATER DEVELOPMENT BOARD

U.S. ARMY CORPS OF ENGINEERS INVESTIGATIONS AND PROJECTS IN THE BRAZOS RIVER BASIN IN TEXAS

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide for National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects addressed in this statement are considered as integral elements in the State's present and future water resource development program.

BRAZOS RIVER AND TRIBUTARIES PROJECT

A basinwide reconnaissance survey was initiated in FY 87 to address numerous water-related problems in the Brazos River Basin. The study includes the analysis of measures for control of floods, development of water supply, hydroelectric power, recreation, and fish and wildlife. Currently, the study is underway in the Leon, Lampasas, and Little River watersheds. The study is scheduled to move to other areas of the Basin in FY 89. A total of $400,000 was requested by the President to continue this study in FY 89. The Board supports the President's appropriation request.

OPERATION AND MAINTENANCE OF EXISTING PROJECTS

The Board supports appropriations to the Corps of Engineers for operation and maintenance during FY 89 for the following projects located in the Brazos River Basin: Aquilla Lake ($497,000); Belton Lake ($1,311,000); North San Gabriel Dam and Lake Georgetown ($991,000); Granger Lake ($1,416,00); Proctor Lake ($1,267,000); Somerville Lake ($2,163,000); Stillhouse Hollow Lake ($1,170,000); Waco Lake ($1,475,000); and Whitney Lake ($2,189,000).

CONCLUDING COMMENTS

The Texas Water Development Board sincerely appreciates this opportunity to provide testimony to the Committee and most respectfully urges the appropriation of funds as requested in order to accomplish properly coordinated, timely, and orderly development of these urgently needed water resource projects in the Brazos River Basin of the State of Texas.

TEXAS WATER DEVELOPMENT BOARD

STATEMENT OF BARRY PALMER, EXECUTIVE DIRECTOR, ASSOCIATION FOR THE DEVELOPMENT OF INLAND NAVIGATION IN AMERICA'S OHIO VALLEY

ACCOMPANIED BY:

ROY LOCKES, GENERAL MANAGER, ANCHOR ENERGY

TERRY JONES, PRESIDENT, MORGANTOWN AREA CHAMBER OF COMMERCE

MARK GABOR, NATIONAL LEGISLATIVE DIRECTOR, UNITED MINE WORKERS OF AMERICA

Senator DECONCINI. Thank you, gentlemen, very much. We appreciate it.

Senator Specter has agreed to take the balance of the testimony today. The next will be from Barry Palmer, the executive director of the Ohio River navigation projects.

Mr. Palmer, if you would come forward and summarize your testimony, I am going to turn the gavel over to Senator Specter.

I thank my friend from Pennsylvania.

Senator SPECTER. Thank you very much, Mr. Chairman. It is a great pleasure to be the acting chairman of this subcommittee. In your absence and the absence of the others, we can perhaps have a markup here and make the appropriate allocations to the deserving applicants.

I am delighted to welcome my good friend Barry Palmer of DINAMO, which is an association for the Development of the Inland Navigation in the Ohio Valley, an organization that I have worked with over the years. It has done outstanding work in the development and modernization of the Nation's inland navigation system of locks and dams. It is a pleasure not only to chair but to introduce my friend.

I look forward to your testimony, Barry. You may proceed.

Mr. PALMER. Thank you, Senator Specter and Mr. Chairman.

I am Barry Palmer, executive director of DINAMO, the Association for the Development of Inland Navigation in America's Ohio Valley.

I would like to introduce the other participants or witnesses with me today. I have, on my right, Mr. Roy Lockes, general sales manager of Anchor Energy In Morgantown, W. Va.; on my left, the president of the Morgantown Area Chamber of Commerce, Mr. Terry Jones; and on his left, the national legislative director of the United Mine Workers of America, Mark Gabor.

Senator SPECTER. Do you have someone behind you?

Mr. PALMER. Yes, sir. I have my counsel with mr, Mr. Martin Hamburger of Lipsen, Hamberger & Whitten.

Senator SPECTER. I thought that he was behind you. You are well represented.

Mr. PALMER. He has been behind me for quite a few years, sir.

Senator SPECTER. He has been behind a lot of us.

Mr. PALMER. Yes, sir.

We wish to express our gratitude, Mr. Chairman, to members of the committee for their support for lock and dam modernization of the Ohio River system. We thank you for increased funding of the new Gallipolis locks in last year's appropriation measure.

We thank you for your funding of the Grays Landing, which is the replacement of Lock Seven on the Monongahela River, a new construction start that was provided last year by this committee, and for the increased funding of the advanced design of the Olmsted project, which will replace locks and dams 52 and 53 on the Ohio River.

This year, Mr. Chairman, we wish to urge your support and that of your colleagues for Ohio Valley lock and dam modernization objectives outlined in the President's budget. There are two notable exceptions, however, where we request funding above the President's fiscal year 1989 budget request.

Attached is a letter from Brig. Gen. Ernest J. Barrell, Jr., the Ohio River Division Commander of the Corps of Engineers, outlining the capability of the Corps with respect to DINAMO inland navigation modernization objectives.

First, the President's budget provides only $2.8 million for real estate acquisition and final design at the Point Marion Lock replacement project. The Corps of Engineers has expressed a capability of $3.8 million for fiscal year 1989, had the additional $1 million will provide a new construction start; that is, groundbreaking of this project in 1989.

Replacement of locks and dams 7 and 8 comprise two projects, but 95 percent of the commercial tonnage moving through this portion of the river transits both structures. It makes a great deal of sense when we start groundbreaking on Grays Landing this year on June 2, 1988, we would like to start ground breaking on the Point Marion project, the companion project, in 1989, next year, so that we can complete both of these projects at the same time because the benefits of the new locks cannot be realized until both are fully operational.

Additionally, Mr. Chairman, we are asking for increased funding of the preliminary design and engineering of the Olmsted locks and dams, which will replace locks and dams 52 and 53 on the Ohio River, Kentucky and Illinois. The Corps of Engineers capability at this project is $5 million for fiscal year 1989. Right now this project is to start under construction 5 years from now, but with expeditious funding of design and engineering now and next year we will be able to start this project in 1991.

On behalf of DINAMO's board of directors and membership, we thank you for the opportunity.

I will ask Mr. Roy Lockes, who moves a lot of coal through locks and dams 7 and 8, if he would just take one minute and outline the importance of this to him and his company.

Senator SPECTER. Thank you very much, Mr. Palmer.

Your minute begins now, Mr. Lockes.

Mr. LOCKES. Good morning, Mr. Chairman.

I am Roy Lockes from Morgantown. Anchor and our affiliated companies move over a million tons of coals annually out of northern West Virginia along the Monongahela River to primarily electric utility companies in Pennsylvania, Ohio, West Virginia, and Kentucky.

I would like to urge increased funding for the Point Marion project in fiscal year 1989. We understand that the Corps of Engineers can start construction at this project in 1989 if this distinguished committee provides an additional $1 million in appropriations.

The problem affecting the existing Monongahela River locks and dams 7 and 8 is the overall condition of the structures and the inadequate size of the lock chambers. There are many frequent lock chamber closures for repair work at both facilities brought about by these structural condition problems.

This creates unexpected delays and severely affects dependable shipping schedules. Therefore, the costly delays to commercial traffic occurs when normal Monongahela River tows must reconfigure and double-lock their tows through these small facilities.

The similarity of problems at each existing facility and the commonality of commercial traffic through the locks requires that concurrent construction actions continue at both locations to assure the removal of this bottleneck from the Monongahela River navigation system and the maximization of the benefits from the authorized replacement actions.

We thank the chairman and the committee for their support and their concern.

Senator SPECTER. Thank you very much, Mr. Palmer and Mr. Lockes.

We appreciate the request which you are making. I personally know of the very great importance of these operations. We will do our utmost to try to accommodate the funding which you have requested. We have been successful by and large in the past on finding the monies notwithstanding budget constraints and we will make our very best efforts again this year. We appreciate very much your being here and testifying.

Mr. PALMER. Thank you for your personal support, Senator.

Senator SPECTER. You are entirely welcome. We will do the very best we can.

[The statement follows:]

STATEMENT OF THE ASSOCIATION FOR THE DEVELOPMENT OF INLAND NAVIGATION IN AMERICA'S OHIO VALLEY

Mr. Chairman and Members of the Subcommittee:

I am R. Barry Palmer, Executive Director of DINAMO, The Association for the Development of Inland Navigation in America's Ohio Valley. DINAMO is a coalition of business and industry, labor, and state government throughout the Basin of the Ohio River and its navigable tributaries and dedicated to the advancement of urgently needed modernization of navigation works on the Ohio River System.

The Ohio River System--Extent and Economic Impact

The Ohio River Basin extends from central Pennsylvania westward to the Mississippi River and from the Great Lakes states south into Alabama. It embraces most of Appalachia, a large portion of the Middlewestern Farm Belt, and much of the Central South. Extensive areas of the Basin are now in a critical stage of recovery from long-term economic difficulty, and much of their economic outlook rests on the base of low-cost transportation by water.

The Ohio River Navigation System, reaching into all sectors of the Basin is a critical feature of this economic base. The system consists of a 2,500-mile waterway network lying within or bordering nine states. In 1985, this system carried 38.1 percent of all the inland waterborne commodity tonnage in the United States, equivalent to over twice the tonnage of domestic commerce on the Great Lakes.

This massive volume of low-cost carriage is of bedrock importance to the mining, manufacturing, farming, local government, and consumer interests of the region. It consists of freight movements not only interior to the Basin but, by virtue of the system's linkage with the Mississippi River, between Ohio Basin communities and distant points throughout the Mississippi River Basin and the Gulf Coast. In 1985, these movements between the Ohio and the rest of the Mississippi System amounted to some 74 million tons, more than double the tonnage of U.S. foreign and domestic commerce via the St. Lawrence Seaway.

Recommendations for Fiscal 1989

It is in the above context that DINAMO recommends the following appropriations for the Fiscal Year 1989:

(1) For the Gallipolis Modification Project on the Ohio River, $60,000,000 for continued construction.

(2) For the Grays Landing Lock and Dam Project on the Monongahela River (also known as the replacement of Lock and Dam 7), $14,200,000 for continued construction.

(3) For the Point Marion Lock Project on the Monongahela River (also known as the replacement of Lock 8), $3,800,000 for the initiation of construction.

(4) For the Winfield Lock Replacement Project on the Kanawha River in West Virginia, $6,500,000 for advanced engineering and design work.

(5) For the Olmsted Locks and Dam Project on the Ohio River, to replace Locks and Dams 52 and 53, KY/IL, $5,000,000 for continued planning, engineering, and design work.

(6) For the Lower Cumberland and Lower Tennessee Rivers Study, $1,450,000 looking toward determination of the feasibility of improvement to river bends on the Cumberland River and of modernization of the Kentucky Lock on the Tennessee.

(7) For Locks and Dam 2, 3, and 4 on the Monongahela River $600,000 for completion of condition studies and preparation of a Draft Feasibility Report.

(8) For the Marmet Lock on the Kanawha River in West Virginia, $850,000 for continued economic and environmental investigations.

(9) For continued progress on the Ohio River Main Stem Study, including Emsworth, Dashields, Montgomery Island, and McAlpine Locks and Dams, $1,660,000. This funding will allow the Corps of Engineers to continue work

with regional states and industries for: (1) identification and assessment of specific economic and environmental impacts of navigation-related development actions and (2) relationships among Ohio River navigation improvements and resulting economic activity, such as capital investment in industrial development, expanding marketing and distribution activities, marine services, and port improvements.

The Study is also providing the Corps with more accurate and comprehensive estimates of the economic benefits, costs, and impacts of navigation projects. The continuing interchange of such information between the Corps and the community of waterway users and shippers is critical to the new public-private sector partnership under PL 99-662.

Concurrence by the Users Board and the National Waterways Study

Mr. Chairman, you may be familiar with the Inland Waterways Users Board, established by Section 302 of the Water Resources Development Act of 1986 (PL99-662). The Board consists of a nationwide membership of shippers, receivers, and carriers. With the scheduled doubling of the inland waterways fuel tax, the Users Board provides input on the part of those most directly affected by the tax as to the waterway projects they deem to have the highest nationwide priority. The Users Board has selected all of the above projects for which DINAMO recommends Fiscal 1989 funding as meriting sustained progress at the full capability of the Corps of Engineers, and three of them (Gallipolis, Winfield, and Olmsted) as needing accelerated progress and expanded Corps capability.

In addition, the National Waterways Study, issued in 1982 by the Institute for Water Resources, under the auspices of the Corps of Engineers, lists all of the old works to be modernized or replaced by these projects as either obsolete or inadequate for projected traffic, and identifies the present Gallipolis installation as a constraint which will block traffic growth, not only at Gallipolis, but at other points on the system as well.

The Urgency of Renewal of the Modernization Program

The modernization program on the Ohio River System has long been in a state of hibernation. The original navigation system was completed during the Hoover Administration in the 1920's. By the end of World War II, major advances in technology and an unprecedented expansion in traffic had rendered most of these old works obsolete. A program for replacement of the entire system got under way in 1953, looking towards completion by about 1970.

During the 17 years, 1953-1970, fourteen new projects were placed under construction on the Main Stem. All of these have been completed. Progress then came to a halt, and for the next 17 years, 1970-1987, apart from a stopgap facility near the mouth, not a single new project was undertaken on the Ohio.

In comparison with overland modes of transportation, the neglect of our Ohio Basin Waterway System is startling. Our Basin railroads operate on rights-of-way incorporating the most advanced space-age technologies. Trucks move swiftly through the Basin over multiple-lane, limited-access highways. Meanwhile, our highly-modernized freight-carrying vessels on the rivers continue to inch through navigation works stemming from the days of the Model-T Ford.

The people of the Ohio Basin are now hopeful that the long slumber in the modernization program has been ended. The project at Gallipolis, Ohio, was recommended for construction back in 1969 with a ratio of projected benefits to cost of 5.6 to 1.0. After 17 years of inaction, construction was at last initiated at Gallipolis late in 1987, and, along with the construction start at Grays Landing on the Monongahela, we are hopeful that this breakthrough signals a renewal of progress throughout the System. It is urgent that this progress be expedited at the maximum rate consistent with orderly and economical procedure. We have a great deal of catching up to do if the water-based industries and energy supply of the Ohio Basin are again to be fully competitive in the national and global markets.

Major Commodity Movements and Water-Based Industries-A Summary

The transportation of certain commodities and fuels on the Ohio River System is essential to a number of major industries and marketing systems. We have attached an Appendix to this statement describing these activities in some detail. The following is a summary. Tonnages are those moved on the system in 1985, the latest year so far reported.

Coal.

In 1985, the Ohio River System carried 21.2 percent of all the coal mined in the United States east of the Mississippi. 7.1-Competitive coal barged via the Olmsted reach to Gulf Coast utilities had an energy content equal to about 34.9 million barrels of imported crude oil. Export coal via Olmsted produced a balance-of-payments benefit of about $265 million. Coal cost reduction is a large component of project benefits on the Monongahela and via Winfield and Gallipolis as well as Olmsted. The total value of coal shipped on the entire system in 1985 was about $3.8 billion. The tonnage was 117.2 million.

Petroleum Products.

In 1985, the gasoline carried on the Ohio River System to multi-state markets was more than equivalent to the entire gasoline consumption of the State of Kentucky. The system also distributed 22.4 million barrels of distillate fuel oil, much of it diesel fuel for truckers and farmers, in addition to residual fuel oil, jet fuel, kerosene, lubricating oils and greases, naphtha, and 2.0 million tons of asphalt, tar, and pitches for such uses as road maintenance. The tonnage of all petroleum products was 14.8 million.

Electric Power.

Most of the fuel consumed by generating stations on the banks of the Ohio and its navigable tributaries is received by river barge. In 1985, these stations consumed some 13 percent of nationwide electric utility coal consumption and produced about 10 percent of total U.S. electric energy. Water-based electric power is of great importance to expanding industries int the Ohio Basin.

Chemicals.

The large complexes of the chemicals industry in the Kanawha and Tennessee Valleys. In addition to those on the Ohio River, are mainly water-based. In 1985, the Ohio Valley sales of chemicals were nearly 10 percent of the national total, whereas chemicals transported on the Ohio River System were 31.7 percent of the nation's inland waterborne total. About 71.1 percent of the system's chemicals tonnage was inbound via the Olmsted reach. The 1985 tonnage was 12.9 million.

Steel.

In 1986, mills on the banks of the Ohio River System produced 18.8 percent of the nation's steel output. Employee compensation was close to $1.6 billion. The industry receives a wide variety of materials and fuels by water. Coal via the Monongahela River and Gallipolis is especially critical. In 1985, the industry shipped about 1.1 million tons of products by water with a sales value of about $470 million, mainly to downstream markets in competition with imports.

Agriculture.

In 1985, a total of 429 million bushels of grains and soybeans, with a farm value of about $1.3 billion, were carried on the Ohio River System. The largest component consisted of Ohio Basin Products moved via the Olmsted reach and down the Mississippi Basins, transitting both Olmsted and the Lower Cumberland and Tennessee to serve the poultry industry of the Southeast.

The river system also holds farm costs in check, providing farm areas with fertilizers, insecticides, herbicides, and motor fuel for trucks and tractors, in addition to low-cost electric energy. The 1985 farm crop tonnage was 12.2 million.

Building Materials

Waterborne building materials include a large quantity for highway and airport construction and maintenance, of importance to state and local governments. As an alternative to trucking these materials, the waterborne movements are a major saving of highway wear and a substantial contribution to highway safety. The 1985 tonnage was 25.1 million.

Federal Waterways Investment an Enhancement of the Nation's Wealth

Mr. Chairman, DINAMO shares with other American citizens a deep concern with regard to the Federal deficit. It might appear to some that our recommendations for the disbursement of many millions of Federal dollars for modernizing the Ohio River System are contrary to this concern. To correct such an impression, we wish to emphasize that we are not proposing any increase in Federal outlays for consumption purposes. Our recommendations, rather, are for highly productive investment in the Nation's capital resources, directed towards a long-term increased per capita income and a rising tax base.

In saying this, we imply no criticism whatever of particular Federal expenditures for non-investment purposes. We recognize the essential character of social and humane objectives. The hungry must be fed. It has been said that a successful fisherman can relieve his neighbor's hunger for today by giving him a fish. But if, in addition, he gives his neighbor his spare fishing tackle, he will thereby relieve his neighbor's hunger for the rest of his life. We do not propose that the fish be withheld. We propose, rather, that the fishing tackle be provided, too.

When Federal funds are allotted to the provision of efficient, long-lived, productive plant, the result is, not a diminution of the country's material wealth, but an enhancement which will deliver increased production and income to the American people for generations. By virture of such investment, the nation becomes richer, not poorer. The modernization of the navigation works on the Ohio River System falls squarely in this category.

Contribution of the Inland Waterways Trust Fund

The Federal general fund investment in waterways improvements is now 50 percent of the total. The users are to pay the other half out of fuel tax revenues in the Inland Waterways Trust Fund. This means that, for every dollar appropriated out of the general fund of the Treasury, two dollars will be available for construction. Construction can thus proceed at double the pace of the 1950's and 1960's without any increase in the waterways' share of charges against the general fund.

The Importance of Progress at Full Capability

Sound Federal finance also dictates that navigation works already under construction, but not yet completed, be brought to completion as promptly as economical and orderly procedures permit. A partially completed structure represents millions of dollars irretrievable sunk in the project. But, until completion, it is as useless as an Egyption pyramid. Pending completion, the labor, fuels, and materials put into it are totally unproductive.

At present, this observation applies emphatically to the projects at Gallipolis on the Ohio River and to Grays Landing on the Monongahela, both now under construction. The cost of avoidable delay may be measured either by the added interest during construction or by the loss of initial benefits.

As for interest during construction, the average rate on long-term Federal obligations now used by the Corps of engineers for determining project feasibility is 8 5/8 percent. At Gallipolis at the beginning of Fiscal 1989, a total of $64.2 million will have been disbursed for essential pre-construction work and actual construction. On this investment, the cost of a one-year delay at 8 5/8 percent would amount to $5.5 million, an outright trashing of the American taxpayers' money for no benefit whatever.

The loss of first-year benefits would be comparable. The investment of $64.2 million is about one-fifth of the total to be invested in construction

at Gallipolis and is justified exclusively by the benefits this $64.2 million will yield. The opening of the Gallipolis project to navigation is scheduled for the beginning of 1992. Taking only those benefits attributable to the elimination of delays at the existing old works, the benefits for 1992 are projected at $28.3 million, and one-fifth of these for which the 64.2 million will already have been committed would amount to a wastage of $5.6 million. It would appear somewhat short of rationality to expend $64.2 million for a package which includes the 1992 benefits and then, by subsequent underfunding and avoidable delay, to refuse acceptance of what has been bought and paid for with the taxpayers' money.

There is some tendency to regard this kind of loss of initial benefits as merely a deferral of benefits to the succeeding year. This is an error. Such benefits are permanently lost. At Gallipolis, the benefits for 1993 will be realized whether the project is completed in early 1992 or delayed a year. The one-year delay would thus wipe out the 1992 benefit without adding anything to benefits in 1993 or later years. The $5.6 million would have been lost by the American people forever.

The Grays Landing project on the Monongahela is subject to the same considerations. At the beginning of Fiscal 1989, just short of $10.0 million will have been invested there in pre-construction and construction work. At 8 5/8 percent, a one-year delay would obviously waste $862,500 of pointlessly incurred interest during construction. With regard to benefits foregone, the existing investment of $10.0 million is about 1/15 of the projected total investment, and, on this basis, the share of the lost first-year benefits would also exceed $850,000.

With these considerations in mind, we at DINAMO earnestly recommend expeditious progress on the projects we have named at the full capability of the Corps of Engineers and in confidence that such progress is perfectly compatible with sound budgetary policy on the part of the Congress of the United States.

APPENDIX
to
Testimony Presented by:
R. Barry Palmer
Executive Director, DINAMO
April 12, 1988

Prepared for:

The Energy and Water Development Subcommittee
of the
Senate Appropriations Committee

Coal

In 1985 (the latest year reported), the Ohio River System carried 117.3 million tons of coal, 21.2 percent of all the coal produced in the United States east of the Mississippi River and 13.4 percent of the nation's total production. As a feature of a secure domestic energy supply, its importance can hardly be over-estimated. The coal carried on the Ohio and its tributaries in 1985 had an energy content equivalent to 39.2 percent of the country's total crude oil imports that year.

Coal-Affected Projects. All of the projects DINAMO recommends for action in Fiscal 1989 are critical to coal, especially the Monongahela River structures and those at Gallipolis and Winfield. Because of the Olmsted location virtually at the confluence of the Ohio and Mississippi Rivers, this project is especially important to coal shipments to the Middle West and the Gulf Coast. The movement has been rapidly rising, from 11.8 million tons in 1980 to 24.5 million in 1985.

Coal and the Balance of Payments. Ohio Basin coal is delivered via the Ohio and Mississippi Rivers and the Gulf Intracoastal Waterway to electric

utilities all the way from northern Florida to Texas. Large tonnages are also transferred in Louisiana from river barges to ocean-going vessels for delivery across the Gulf to the Tampa area.

Ohio Basin coal shipped by water to the Gulf Coast is a substantial contribution to the U.S. balance of payments as well as to energy independence. About one-half of the tonnage is consumed by Gulf Coast utilities as a direct substitute for fuel oil refined from crude oil imports. In 1985, this coal had an energy content equivalent to about 34.9 million barrels of crude oil, roughly the same as 11 days of total nationwide imports that year.

The other half is exported. Exports of waterborne Ohio Basin coal are large and growing, having risen from 3.9 million tons in 1980 to 8.2 million in 1985. The 1985 exports had a valued exceeding $265 million. The low cost of river carriage permits even the most inland states to participate in this trade. The State of West Virginia, for example, shipped 3.8 million tons all-river for export via the New Orleans area in 1986, a river distance of 1,693 miles. This movement transits the Winfield, Gallipolis, and Olmsted reaches. In addition, another 1.3 million tons of West Virginia coal were shipped for export via the Monongahela River, making rail and lake connections to Canadian utilities.

Affected Incomes. For the shipping communities waterborne coal is obviously a major engine of prosperity. The value of the coal shipped on the Ohio and its tributaries in 1985 was about $3.8 billion. Most of this was income to the region--mine supplies, maintenance services, electric power, machinery and equipment sales, and investor income are illustrative. The waterborne coal represented the production of about 31,500 miners and mine payrolls approximating $900 million.

In 1985, the Point Marion and Grays Landing reach of the Monongahela transited 7.2 million tons of coal mined in the two northern counties of West Virginia, Monongalia and Marion, about 34.2 percent of the total coal production of these counties. Local respending of the resulting income by households more than doubled the over-all regional benefit.

Benefits to Railroads. Railroads are also among the notable beneficiaries. Most of the 13.4 million tons shipped by river barges from Huntington, West Virginia, in 1985 originated at distant inland mines by rail. Northbound coal on the Monongahela is transferred to rail cars in the Pittsburgh area for shipment to Lake Erie ports. Major tonnages of Kentucky coal also originate by rail at inland mines In northern Alabama, waterborne coal on the Tennessee River is tranferred to rail haulage for distribution to electric utility plants in the Southeast. Most waterborne coal thus represents a bimodal, rail-water partnership.

Petroleum Products

Motor Fuels. Waterborne receipt of petroleum products is a big factor in the Ohio Basin energy supply. In 1985, over 2.0 billion gallons of gasoline were transported form refineries and pipeline terminal to market areas on the Ohio River System. This gasoline had a consumer tank car value of over 41.8 billion. Delivery by tank trucks from barging terminals to local filling stations diffuses the benefits very widely to inland communities throughout the Basin. As a measure of quantity, the 2.0 billion gallons was considerably more than the total gasoline consumption of the State of Kentucky that year.

The tourist industry is very important to numerous subareas, particularly in the Appalachian region, and an abundant and seasonally flexible supply of waterborne gasoline at low cost is valuable to this industry.

The Ohio River System likewise carried over 22.4 million barrels of distillate fuel oil in 1985, with a value of about $835.4 million. This included large quantities of diesel fuel for local and highway trucking and for farm tractors and other machinery.

Other Petroleum Products. About 6.5 million barrels of residual fuel oil, with a value of $183.7 million, were also transported on the system in

1985. In addition, the system carries large quantities of jet fuel, kerosene, lubricating oils and greases, naphtha, and other solvents. In 1985, over 2.0 million tons of asphalt, tar, and pitches were carried on the Ohio River System, of importance to the construction industry and to highway maintenance.

Enhancement of Competition. River barging enhances competition in the petroleum industry. Barging is a favorite mode of distribution by independent distributors and marketers who cannot command enough capital for pipeline participation Barging costs are competitive with pipelines, but barging is more flexible in adapting to changing seasonal demands and to altered destinations. In addition, barging is helpful to small towns and rural terminals which are not large enough to absorb pipeline delivery. River barging of petroleum products is sometimes called "the poor man's pipeline".

Electric Power

Low Fuel Cost. The low cost of waterborne fuel, especially of coal, combines with abundant water supply to make the Ohio Valley a central power bank of low-cost electricity contributing to supply reliability over extensive areas of the Northeast Quadrant of the United States. Fossil fuel generating stations on the banks of the Ohio River and its navigable tributaries, mostly investor-owned, consumed about 88 million tons of coal in 1985, most of it received by water and produced some 10 percent of the nation's total electric power.

Receipt of coal by water costs about one-third as much as the least costly alternative mode of transportation, so that delivered fuel cost per kilowatt-hour is substantially lower at these stations than the national average. The savings are passed on at lower rates to consumers.

Inland Communities Affected. Benefits are widespread. High-voltage transmission lines carry electricity from riverside stations to inland communities such as Canton, Dayton, and Columbus, Ohio. Indeed, at times, through system interconnections, the Ohio Valley stations have provided backup power to relieve shortages in such distant communities as New York, Detroit, and Roanoke, Virginia.

Electric Power and Economic Growth. The abundance of reliable electric energy at low cost is a mainstay to the Basin's high-energy industries, such as aluminum reduction, chemicals, and electric steel. Technological progress in computerized communication and manufacturing controls, robotics, electronic synchronization, and laser applications heighten the importance of electricity to the region's future as it emerges from the "Rust Bowl" designation to full participation in the nation's industrial development in the 1990's.

Hydroelectric Power. Fossil fuel power is currently supplemented by hydroelectric power at Ohio River locks-and-dams formerly considered to be exclusively for navigation. Traditionally, hydroelectric power required a drop in water level much greater than that provided by these dams, but more recent technology corrects this limitation.

The Ohio River Basin Commission reported in 1978 that, in addition to the two sites at that time in production (Markland and McAlpine), there remained 15 with an annual capacity of 3.5 billion kilowatt-hours. Since that time, additional hydroelectric plants have been constructed at the Greenup and Racine Locks-and-Dams, and non-Federal interests (investor-owned utilities and municipalities) have applied for licenses to construct and operate hydroelectric plants at all remaining dams on the Ohio River with hydroelectric capacity, including Gallipolis.

Chemicals

Water-Based Logistics. Waterway transportation is essential to the multi-modal logistics of the Ohio Valley chemicals industry. Most of the industry receives bulk fed stocks and Intermediates from the Gulf Coast and

the Mississippi Valley by river barge. The industry converts these into products for distribution, by water, rail, and truck, throughout the Northeast Quadrant of the United States. Waterborne receipts include sodium hydroxide, resins, liquid sulphur, sulphuric acid, alcohols, benzene, toluene, xylene, and numerous others.

Products. Probably no other industry matches chemicals in the diversity of its products. They include medicines, wrappings, containers, preservatives, fibers and fabrics, building materials in wide variety, materials for furniture, fixtures, appliances, and machines, automobile components, cleansers, weed and insect killer, and farm fertilizers, among many others.

In 1985, the sales of Ohio Valley chemicals plants were between 7 percent and 10 percent of the national total. But, the chemicals carried on the Ohio River System were 31.7 percent of the national inland waterborne total.

Affected Navigation Projects

The waterway improvements we recommend are clearly of special importance to this industry. In 1985, inbound shipments via the Olmsted reach were 71.1 percent of the total Ohio River System chemicals tonnage. Of these, 85.0 percent originated on the Gulf Coast. Olmsted also transits large tonnages consigned to Tennessee River destinations. These move, also, of course through the area of Kentucky Lock. Hundreds of miles upstream from Olmsted, in the Kanawha River Valley a a large chemicals complex is centered in the Charleston, West Virginia, area. Feedstocks for this complex must traverse, not only the Olmsted reach, but, in addition, the Gallipolis and Winfield works. This area contains such major chemical establishments as DuPont, Allied Corporation, FMC, Monsanto, and Union Carbide. West Virginia works on the Ohio River include American Cyanamid, Ashland Chemical, Goodyear, Marbon chemical, and Mobay Chemical.

Growth Outlook. With modernized navigation works, the outlook for growth of the chemicals movement is very favorable. Under contract with the Army Corps of Engineers, Robert R. Hathan Associated prepared an extensive, in-depth study of growth prospects. This study projects an Ohio River System chemicals movement in the year 2000 of 22.4 million tons. This compares with 12.9 million tons in 1985. Clearly, however, this encouraging outlook is contingent on expeditious completion of the modernization program.

Steel

Magnitude and Employment. The Ohio Valley steel industry remains a major component of the nation's supply. In 1986, the Ohio Valley mills produced 18.8 percent of the nation's steel output, providing jobs for about 33,000 people whose total compensation was close to $1.6 billion. Waterway transportation, especially on the Monongahela and Upper Ohio Rivers (the latter via the Gallipolis Locks) is critical to this industry.

Cost Influence. In 1986, the segment of the steel industry in the Upper Ohio Valley consumed about 4.3 million tons of coal, almost entirely waterborne. In addition, the industry receives large tonnages of such essential materials and fuels as ferrous scrap, ferroalloys, fluxing stone, and fuel oil via the rivers. The steel industry is a major consumer of electric power, and the region's low cost of electricity produced from waterborne fuels is a substantial element in the industry's competitive position.

Product Shipments. Waterborne shipments of semi-finished and finished steel are especially important. These are principally downstream movements to the Lower Ohio and Mississippi Valleys and the Gulf Coast. Most of the shipments traverse the Gallipolis Locks and all of those to the Mississippi Valley and the Gulf Coast move through the Olmsted reach.

In 1985, the Ohio Valley steel industry shipped over 1.1 million tons of products via the Ohio and its tributaries. These shipments had a sales value

of about $470 million and represented the production of some 3,300 workers. Faced with intense competition from foreign steel in the lower river valleys and on the Gulf Coast, the present outmoded locks are a significant and growing handicap in market access for this industry, and expeditious modernization will prove a valuable reinforcement to steel jobs and incomes on the Ohio River and its navigable tributaries.

Agriculture

When President Hoover dedicated the original navigation system of the Ohio River in 1929, he placed special emphasis on the importance of the system to agriculture. That importance remains undiminished today. The Ohio River System is beneficial to farmers both as a restraint on costs and as a stimulus to income.

Farm Costs. Farms are large consumers of electricity for lighting of work areas and for machine operations as well as for residential use. The cost of electricity in rural areas is significantly lowered by the low charges for waterborne delivery of fuels to riverside generating stations. Motor fuels for farm trucks and tractors are received in rural areas by river barge. In 1985, 2.8 million tons of chemical fertilizers were moved to farm areas on the Ohio River System, in addition to a large tonnage of insecticides and herbicides. As a measure of magnitude, the fertilizer tonnage exceeded the total consumption of commercial fertilizer in the State of Indiana that year.

Farm Income. While the benefits to farm costs are large, those to realized farm income are even greater, beneficial not only in the Ohio Basin but, in addition, to farmers in the basin of the Upper Mississippi and Illinois Rivers. In 1985, a total of 429.0 million bushels of grains and soybeans were carried on the Ohio River System, with a farm value of about $1.3 billion. As a measure of magnitude, this revenue was equivalent to 54.9 percent of the total farm income from crop sales in the State of Ohio that year. The benefit to farmers was actually much greater because low, multiple-car railroad rates to the Gulf and the Upper Tennessee Basin were closely geared to meet waterway competition.

Affected Projects. Practically all the movement of farm crops transits the Olmsted reach or the Kentucky Lock area, or both. The grains and soybeans moved via Olmsted in 1985 amounted to about 372.1 million bushels with a farm value exceeding $1.1 billion. This includes upbound movements from the Upper Mississippi and Illinois River Valleys, amounting to 59.9 million bushels with a farm value of $192 million. The remaining 312.2 million bushels were downbound from Ohio Basin farms, 297.1 million to the Gulf Coast for export and the remainder to the Lower Mississippi Valley. The revenue to Ohio Basin farmers from the Olmsted transits amounted to about $938.8 million.

The Lower Tennessee carried 81.8 million bushels upbound to the Southeast, with a farm value to $268.2 million. Of this, 59.9 million bushels orginated on the Upper Mississippi and Illinois Rivers, and income approximating $192.5 million to farmers mainly in Illinois, Iowa, Kansas, Minnesota, Missouri, and Nebraska. The remaining 21.9 million bushels provided a farm income of about $75.7 million in the Ohio Basin. Both movements serve the animal and poultry feeding industries of the Southeast. The waterway movement is matched by very large tonnages carried by rail at water-competitive rates. The waterway movement and the water-induced low railroad rates are thus a significant contribution to food supply and price restraint on the Atlantic Coast.

The Balance of Payments. The importance of the Olmsted project to the U.S. balance of payments is measured, not only by export coal, but also by the $900.9 million value of Ohio Basin crops consigned to the Gulf, also for export. The farm crop movement has every prospect of substantial growth if adequate navigation facilities are provided. The U.S. Institute for Water Resources projects a growth in farm product movement on the inland waterways from 1985 to 2000 of 45.8 percent if not constrained by inadequate navigation works.

Building Materials

Local Government Benefits. The Ohio River System carries a substantial tonnage of such building materials as structural steel, lumber, veneer, and plywood. But the really major tonnages are aggregates (sand, gravel, and crushed rock), asphalt, tar, pitches, and building cement. In 1985, the system carried over 25.1 million tons of these materials. The movement is especially important to finances of local governments. Aggregates and building cement are used directly for road maintenance and for mixing and application of concrete, much for highways and airports, as well as for local roads and streets.

Roadway Conservation and Safety. Waterway receipt of these materials is important, not only to reduce costs of maintenance but, with respect to roads, to reduce the need for maintenance. Bargeloads of sand and gravel are obtained mainly from dredging the river beds. These are fairly ubiquitous materials, and the usual alternative to the river source is the sand-and-gravel pit with delivery to work sites by truck. The wear on roads, streets, and highways of heavily-loaded sand-and-gravel trucks is obvious.

At 20 tons per truckload, the sand and gravel carried on the Ohio River System in 1985 would have required about 1.07 million truck movements, that is, one every 30 seconds, day and night, for 365 days of the year. The wear and tear on streets and roads, not to mention the danger to passenger cars and pedestrians, combines with the problem of noise pollution to sum up the social values of keeping the movement on the rivers.

OPPOSITION—ANIMAS-LA PLATA PROJECT, COLORADO AND NEW MEXICO

STATEMENT OF JAMES C. DECKER, RESIDENT AND PROPERTY OWNER FROM DURANGO, COLO.

Senator SPECTER. Mr. James Decker is our next witness. Mr. Decker, we have your statement which will, in accordance with our rules, be made a part of the record. To the extent that you can summarize that, we would appreciate it.

Mr. DECKER. Thank you, Senator Specter.

My names is James Decker, and I am a resident and property owner in Durango, Colo., within the Animas- LaPlata Water Conservancy District.

Senator, the Animas-La Plata project is the biggest of the new starts on the Bureau of Reclamation's list. We have been opposed to this project for 10 years, and that is why I am here today to continue our opposition.

I am here alone. We had an election in the district last December and the project was approved in a repayment contract by 59 percent. I would like to put that in perspective for you, Senator.

We feel that that was a fairly impressive opposition given the fact that those projects to the beneficiaries are sold as getting something for nothing. I have included for your inspection, on the last page, a copy of their ad, which is quite clear, that you support this project because someone else is paying for it. I would like to draw your attention to that, that this is the way it was sold.

We have continued to oppose this and we will continue to oppose this. There was a 41 percent opposition. To put this into perspective, the Delores project was passed by 97 percent and presently is in trouble

because there are law suits of neighbors against neighbors who regret the fact that they supported it in 1977. This one is only supported by 51 percent, and we think that that is impressive.

Of the 41 percent, they asked us to continue the fight against this project. I have listed in my statement some of the reasons that we will continue to oppose the project. It increases agricultural production at a time when the federal policy is designed to decrease agricultural acreage.

It is designed to produce products we don't need, which are produced by other federally subsidized projects. It is expensive, $5,800 of capital investment per irrigated acre. There are still the environmental grounds for opposition.

Most importantly, it still awaits the authorization in the Indian water right settlement bill. This is very important to us in the West, Senator Specter, because one of the possibilities is that it is based on interstate sales, contracting of water, and it is opposed by Arizona, Nevada, and California.

We would request two things, Senator. That the committee, first of all, consider not appropriating anything against this project and thereby lay it to rest permanently so that we can go on with sensible water planning. Lacking that, if you would not pass any appropriations for this year until there is an acceptable Indian water right settlement bill that would settle this issue of interstate leasing from upper basin to lower basin states.

I would like to answer any questions for you, Senator, if you have any.

Senator SPECTER. We appreciate your coming. We have your point, and your exhibit has a certain amount of power to it that it is being supported because someone else is paying most of the tab. That is a very powerful argument, and we thank you, Mr. Decker.

[The statement follows:]

STATEMENT OF JAMES C. DECKER, DURANGO, CO

I am James Decker, a resident and property owner in Durango, Colorado within the Animas-LaPlata Water Conservency District. For over ten years I have opposed the construction of the Animas-LaPlata Project, individually and as a member of taxpayers for the Animas-LaPlata Referendum (T.A.R.). As such, I have appeared before this committee and others to urge the defeat of this project as presently designed. The outcome of the repayment contract election has not changed my convictions. In fact, many opponents to the project have encouraged me to continue our opposition. That is why I am here today.

The election in the district last December approved the contract by a fifty nine percent majority. In terms of water projects, this is not an impressive victory. The nearby Dolores Project was approved by a ninety seven percent majority. Nevertheless, that project is endangered by a lawsuit brought by some of the same "Beneficiaries" who voted for the repayment contract. The large opposition to the Animas-LaPlata foretells problems for this project as well. At any rate, the proponents can no longer characterize the opposition as a small pocket of resistance Forty one percent of the economic beneficiaries of a federally subsidized project is too large a group to be overlooked.

In the election, the project was sold as getting something for nothing. I have attached a sample of their advertising for your inspection. According to their calculations in this ad, very little of the funds (three percent) are from local sources. If this is true it is appropriate for me to direct this appeal to the federal government which controls the lion's share of the payments.

The fact that the repayment contract election approved the project does not correct its faults.
--It is still designed to increase agricultural production at a time when federal policy is designed to decrease agricultural acreage.
--It is still designed to produce products we don't

need and which are produced by other federally subsidized projects.
--It is still to expensive; $5800 of capital investment per irrigated acre.
--It is still opposed on environmental grounds by many environmental groups such as the National Wildlife Federation, American Rivers, Friends of the Earth Environmental Policy Institute and others.
--It still awaits an Indian Water Rights settlement Bill that does not violate the Colorado River Interstate Compact.

As a result, we continue to oppose the shortcomings of the present project, that is, the high costs of the Ridges Basin Reservoir, the Durango Pumping Station, the Ridges Basin Pumping Station, and generally the Phase I facilities.

Alternatively, we would support a variety of proposals that would satisfy the Indians' legitimate water rights claims; the only remaining valid objective of the Animas-LaPlata Project. These alternative proposals include the cash-out plan suggested by the National Wildlife Federation, or gravity fed, on-reservation waters storage projects proposed in the past by ourselves or the Environmental Policy Institute.

Since these proposals deal directly with Indian Water rights claims, they avoid the necessity of unanimous concurrence of all the governments, Indian and non-Indian, involved in the present proposal. This simplification could bring an earlier and certainly less costly solution to the Indian claims.

But to achieve this, the present Animas-LaPlata Project must be put to rest. That you can do by voting against this appropriation. I respectfully urge you to do this so that reasonable water planning can begin. Lacking that, we urge you to delay appropriations, until passage of an acceptable Indian Water Rights Settlement Bill.

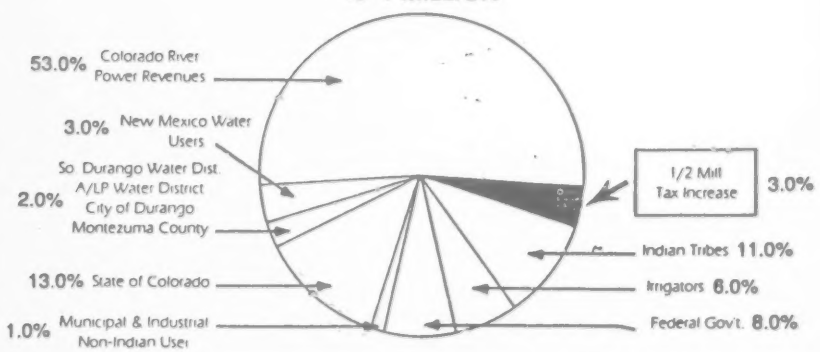
WHY WE SHOULD SUPPORT THE ANIMAS - LA PLATA PROJECT.

REASON #7:

...BECAUSE SOMEONE ELSE IS PAYING MOST OF THE TAB!

We get the water. We get the reservoir.
They pay the bill.

TOTAL PHASE I. COST
$379 MILLION



SUPPORT
ANIMAS - LA PLATA
VOTE ☑ YES
TUESDAY, DECEMBER 8

PAID FOR BY TAXPAYERS FOR WATER & ECONOMIC DEVELOPMENT
JEFF MORRISSEY - TREASURER

WEST FORK, MILL CREEK LAKE, OHIO

STATEMENT OF JOHN BRADY, DIRECTOR, HAMILTON COUNTY PARK DISTRICT, OHIO

ACCOMPANIED BY BOB MASON, ENVIRONMENTAL SPECIALIST

Senator SPECTER. Our next witness, our final witness, is Mr. John Brady, director of Hamilton County Park District of Ohio.

Mr. Brady, we have your prepared statement. In accordance with our subcommittee rules, it will be made a part of the record, and we would appreciate your summarizing.

Mr. BRADY. Thank you very much, Senator Specter, for giving us the opportunity to come before you today and describe the severe environmental problems that we are experiencing at the West Fork of the Mill Creek Lake.

Senator SPECTER. Would you introduce the gentleman with you?

Mr. BRADY. Yes, I will. My name is John Brady, and I serve as director of the Hamilton County Park District. With me here today is environmental specialist Bob Mason.

Park districts are a major regional park system created by the Ohio State Legislature and dedicated to conserving natural resources and providing outdoor recreation in our nearly 10,000 acres. We are located in the highly urbanized and densely populated Cincinnati in southwestern Ohio. Our park district has a long-term lease with the U.S. Army Corps of Engineers for the lake and surrounding property.

Congress approved creation of the lake in the early 1950's to provide flood protection for the city of Cincinnati, the county, our interstate transportation corridor, and the city's industrial core, which includes such manufacturing giants as Proctor & Gamble and Emory Industries.

The Corps' planners did not anticipate the tremendous residential and commercial development in the 30-square mile watershed, and that includes six separate municipalities and three townships. Tragically, this lake is filled in at a rate more than double the Corps' original estimate. More than half of the volume of the lake has now been silted in and some 40 percent of the surface area has been lost as well.

Winton Woods Lake has previously suffered from pollution, both point source and nonpoint source. However, through our leadership and our efforts and the cooperation and support of our local citizens, we have made tremendous progress in removing most of the sedimentation and we have been able to reduce the inflow, but even that cleanup has been severely compromised by the lake's reduced water volume. The actual recycling of pollutants from the existing 1.3 million cubic yards of sediment, even if all incoming pollution was completely eliminated, the lake would still continue to be eutrophic and would deteriorate from this in-lake cycling.

From an ecological standpoint, the number, the size, health, and reproductive capabilities of all forms of animal life, as well as plant life have either been eliminated or reduced significantly.

A graphic analogy for the condition of Wentwoods Lake is that of an unflushed toilet. The smell, bacteria, and reduced water volume due to the buildup of waste is both unpleasant and unhealthy. Additional deposits only increase the problem. The only solution is to flush the toilet. That is basically the same solution required at Wentwoods Lake. The pollution ridden sediment which exists in the lake has to be removed to restore water quality.

Although very supportive and helpful, the Louisville District and the Ohio Division of the U.S. Army Corps of Engineers does not have the funds necessary to restore the lake. The Corps did propose funding the lake's restoration under section 1135 of the Water Resources Development Act of 1986. However, the administration's budget included no such funding for that section.

In spite of federal ownership and misjudged sediment projections, the Hamilton County Park District has itself committed significant funds to protect, maintain, and manage the lake under extremely difficult circumstances.

STATE COST SHARE

The state of Ohio has recently approved $2 million to assist the federal government with the cleanup of the lake. This significant contribution further demonstrates local concern for the seriousness of the problems and the detrimental impact it has on our community, our wildlife, and natural resources.

It is a critical environmental issue which simply cannot be ignored. Based on several studies and research and the success of a similar improvement project at nearby Sharon Lake, all the scientists, professional engineers, environmentalists, the park district, the state of Ohio, and the Corps, only the removal of the 1.3 million cubic yards of sediment will restore the lake. Construction of other improvements will reduce or eliminate the onslaught of pollution ridden sediment in future years.

For their personal health, the environment, and the thousands of species of fish, animal, and plant life, Cincinnati, as well as the users of the park, not only Ohio, but also Indiana and Kentucky, provide the necessary funds through section 1135 of the Water Resources Development Act or through an appropriate section of the U.S. Army Corps of Engineers construction capital or operation budget for fiscal year 1989 to restore this irreplaceable and invaluable asset.

Mr. Mason and I would be happy to answer any questions that you may have.

Senator SPECTER. We have your point. We have your full statement, and you have made a good summary and explanation. Mr. Brady, I understand the nature of your problem, and we will give it very careful consideration. Again, it is a matter of trying to allocate limited resources to the areas of greatest need, and you have our attention.

Mr. BRADY. Thank you very much.

[The statement follows:]

STATEMENT OF THE HAMILTON COUNTY PARK DISTRICT, OH

Summary

Background - The West Fork of the Mill Creek Reservoir is a 180+ acre reservoir in the Metropolitan Cincinnati area, approximately twelve miles north of downtown. It was built by the U. S. Army Corps of Engineers in 1952 for flood control and recreation partly on land donated to the Corps by the Hamilton Park District, who also helped share the construction cost with the Corps and the City of Cincinnati. The pool and abutting lakeshore was leased to the Hamilton County Park District - a regional metropolitan park system serving the Greater Cincinnati area - to serve as a regional park. The reservoir immediately became a major recreational resource for Southwest Ohio, Northern Kentucky and Southeast Indiana.

Rapid urbanization in the drainage area beyond the boundaries and control of the Park District has meant sedimentation at a rate double that predicted by the Corps when the reservoir was designed. This sedimentation resulted in deterioration of the reservoir as an environmental and recreation resource and, to a lesser extent, flood control. The Park District has expended much time and money in the past in trying to eliminate pollution, remove sediment and to maintain the reservoir, and in funding several studies to determine the problems and best solutions to restoring the reservoir. The result is the development of a plan for restoration that calls for dredging the 1.3 million cubic yards of sediment and construction of structures to help reduce the impact of future sedimentation. The plan is estimated to cost ten million dollars. In spite of the fact that the reservoir is Federally owned, and due to the importance of this project to the whole region and strong support for this project at the local and state level, the State of Ohio has contributed two million dollars from its Capital Improvement Budget for this project, thereby offering some financial relief and reducing the Federal cost to eight million dollars.

Requested Action - In order to return over one-half of the original water volume, 40% of the lake surface area, to restore the environmentally based health levels, to provide even minimum ecological standards for all forms of animal and plant life, to provide for outdoor recreation and to restore full flood control capabilities; we request that eight million dollars be appropriated through Section 1135 of the Water Resources Development Act of 1986 (PL 99-662), or through an appropriate section of the U.S. Army Corps of Engineers Capital or Operation and Maintenance budget for Fiscal Year 1989, for restoration of West Fork of the Mill Creek Reservoir in Hamilton County, Ohio.

TESTIMONY OF JON BRADY FOR
THE HAMILTON COUNTY PARK DISTRICT
BEFORE THE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

Mr. Chairman and members of the Subcommittee, my, name is Jon Brady. I am Director of the Hamilton County Park District, a regional park system serving the citizens of the Greater Cincinnati area in Ohio. With me today is Bob Mason, who is the Environmental

Specialist with the Park District. On behalf of our Board of Park Commissioners and the citizens we serve, I wish to thank you for this opportunity to come before your committee today.

In 1951, the Hamilton County Park District donated 642 acres in its Winton Woods Park to the Department of the Army for construction of a reservoir on the West Fork of the Mill Creek for flood control and recreation. The Park District and the City of Cincinnati jointly contributed one million dollars toward its construction. Upon its completion in 1953, West Fork Reservoir was leased to the Hamilton County Park District to provide recreational opportunities for the citizens of Greater Cincinnati.

When the dam was built, the lake's 29.5 square mile watershed was mostly rolling, sparsely settled countryside. In spite of its remoteness, the lake was an immediate hit with the public, with over 10,000 fishermen trying their luck the first full year of operation.

Originally, the reservoir had a capacity at pool of 2.47 million cubic yards of water and a surface area of more than 180 acres. Within five years, however, the drainage area beyond the project boundaries saw unprecedented growth and development. In 1962, the Corps estimated that sedimentation of the lake was occurring at more than double their original pre-construction estimate. By 1976, the Corps found the lake more than 1/3 filled in by sediment and 5% of the flood control capacity gone. Presently, about 1.3 million cubic yards of sediment chokes the lake. The lake's average depth has now been halved and the western-most 40% of the lake is no longer navigible, even by rowboat. The number of fishermen now averages only 1/2 of the numbers of seventeen years ago; this in spite of the fact that recreational facilities and access have been greatly improved and the area around the project is now one of the most heavily populated areas in the Tri-State region.

Sedimentation has not been the only problem facing this lake. Both point source and non-point source pollution have also adversely impacted on the ecological quality of the lake. In an independent assessment by the Ohio EPA in 1978, West Fork Reservoir was classified as eutrophic. Fish populations in the lake have shifted from bass, pike, crappie and bluegill to mostly carp and catfish. Algal blooms have been common on the lake; and even though the lake now averages only about four feet in depth, we have noted temperature and oxygen stratification in summer.

However, through the years, the Hamilton County Park District has not been sitting idly by. Throughout the 1960's, the Park District operated without a tax levy, earning its meager way with income it earned from fees and rentals. Nonetheless, the Park District continually did its best to maintain the lake and pursued every possible avenue open for assistance. During this time, the Corps of Engineers personnel at the Louisville District and the Ohio River Division have been most supportive and helpful and have rendered assistance wherever permitted by law and budget.

To help protect this reservoir from further deterioration, in 1979, the Park District created its own water quality monitoring program by the Environmental Specialist. Since January, 1980 more than $230,000 in local money has been spent directly on efforts to help the lake. Through efforts by the Park District, daily pollution loading into this reservoir from outside park boundaries

has been reduced by at least 368 pounds. We are presently working with the Ohio EPA, the regional Metropolitan Sewer District, the Regional Planning Authority, the Soil Conservation Service and a recently formed Watershed Task Force to further reduce pollution and sediment loadings into this reservoir. We have been awarded a **Phase I** grant under **Section 314 of the Clean Water Act of 1987** to study ways of reducing non-point source pollution and erosion in the watershed and are reasonably optimistic about our chances for a **Phase II** implementation grant to actually reduce non-point source and sediment loadings even more. A 1987 Park District-sponsored study by the University of Cincinnati concluded however, that no improvement in this lake's condition is possible without the removal of the sediment already accumulated in the lake.

The Hamilton County Park District has funded four independent studies of West Fork Reservoir since 1985. The State of Ohio also sponsored a fifth study that focused on problems in the watershed. From these studies has been developed a plan for restoration. This plan calls for dredging to remove the nutrient-rich sediment presently in the lake and to give the lake back needed depth, and the placement of structures and implementation of measures to minimize a re-occurrence of deterioration seen over the past thirty-four years. Beyond that, the Park District is looking toward the creation of its own, on-going maintenance dredging program, utilizing Park District funds, to further assure that major restoration of this resource will not have to be repeated.

Local citizens have been drawn to the plight of this lake and school children have actually begun voluntarily donating their lunch money to help pay for saving this lake. The sums these children are collecting are small, but the interest and enthusiasm is contagious. We were gratified last month with the announcement that the State of Ohio has placed $2 million dollars toward dredging of West Fork Reservoir in its Capital Improvements Budget for the next biennium, giving us two years to secure the additional $8 million needed for the project from Federal sources.

In mid-1987, the Louisville District and Ohio River Division of the Corps of Engineers informed us that there may be a vehicle by which the Corps could participate in a restoration effort. **Section 1135 of the Water Resources Development Act of 1986 (PL 99-662)** authorized the Secretary of the Army to review the operation of water resources projects already built to determine the need for modifications **"for the purpose of improving the quality of the environment in the public interest"**. Subsection (b) of Section 1135 authorized the Secretary to carry out demonstration projects during the succeeding two years, and subsection (d) authorized an appropriation of not more than $25 million to carry out this section. Both the Louisville District and Ohio River Division felt that West Fork Reservoir fit the letter and spirit of this section.

The Hamilton County Park District supplied requested information to the Louisville District which recommended the project for funding under Section 1135 and forwarded it to the Division level. The Ohio River Division judged it to be their highest priority 1135 project and forwarded it to the Office of the Secretary of the Army with a recommendation for funding. Unfortunately, no funds for Section 1135 were recommended by the President for Fiscal Year 1989 in his budget message to the Congress, thus giving Congress the opportunity to provide the leadership to solve this critical environmental issue.

When Public Law 99-662 began its journey through Congress as HR 6 in January of 1985, Congress clearly determined there was a significant need to look beyond just flood control. Congress saw a need to examine environmental problems at existing Corps projects. For that reason, Section 1135 was written into the law. Since then, the need that Congress so wisely provided for has not disappeared. As the numerous Corps reservoirs around the United States age, the need for these types of restoration projects will increase along with the costs of implementation. The proposed project for West Fork Reservoir is clearly authorized by the legislation and ideally fits the intended mold for a demonstration project.

In two respects, West Fork Reservoir may not be typical of other Corps reservoirs; but it is these two respects that make it ideal for a demonstration project. At its original 180+ surface acres, West Fork Reservoir is smaller than many of the Corps' more recent, grander projects. It is also a bit different from many in that it sits in the midst of a highly urbanized, densely populated watershed. It was not originally intended to be an urban lake, but rapid development has turned it into one. We suggest this urbanization of West Fork's watershed is a harbinger of what can be expected in the future for other Corps lakes. By evaluating what has happened here, the effects and proposed solutions, we as a nation, will be better prepared to address future problems and apply solutions at other Corps lakes as they age and their watersheds similarly develop. Because West Fork Reservoir is smaller than many of the Corps projects, we can implement and evaluate a whole-lake restoration project for a fraction of the cost we would have at many of the other later Corps sites.

What has occurred at West Fork Reservoir is certainly happening at all Corps reservoirs nationwide, except at varying rates. If we as a nation choose to ignore the aging of our reservoirs, sooner or later we will face the same problems at each of them. West Fork Reservoir is opportunely sized, matured and situated to give us a look at problems and solutions that can be applied, not only to restoration of existing projects, but also to the design of future projects to minimize the need for later corrective action.

We respectfully request that this subcommittee recommend an appropriation of $8 million dollars for Fiscal Year 1989 under Section 1135 of Public Law 99-662, or through any other section of the U.S. Army Corps of Engineers Capital or Operation and Maintenance budget for Fiscal Year 1989, and that the Secretary of the Army be directed to expend this appropriated sum for restorative work at the West Fork Reservoir, Hamilton County, Ohio.

RESOLUTION 1-1988

SUPPORTING EFFORTS TO
RESTORE WINTON WOODS LAKE

WHEREAS, Council has been apprised of the efforts of the Board of Park Commissioners and the staff of the Hamilton County Park District to restore Winton Woods Lake;

WHEREAS, Council is aware of the tremendous benefits that Winton Woods Lake provides to our community in terms of flood control, loss prevention, and recreational and environmental values;

NOW THEREFORE, BE IT RESOLVED by the Council of the City of North College Hill, State of Ohio, a majority of the members elected thereto concurring:

Section 1.
Council urges its U.S. Senators and Representatives and local state Senators and Representatives to continue their support for the restoration project and to continue their efforts to secure the funds necessary.

Section 2.
Council directs its Clerk to mail a copy of this resolution to all members on the mailing list sent by the Hamilton County Park District.

Section 3.
This resolution shall take effect and be in force at the earliest period allowed by law.

Passed this 19th day of January 1988

Charles M. Hobbs
President of Council

Attest: Colleen M. Bens
Clerk of Council

Approved this 19th day of January 1988

Dawn R. Brock
Mayor

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

Senator SPECTER. The staff tells me that several national groups have submitted statements covering activities before the subcommittee.

Without objection, those statements will beade part of the record.

[The statements follow:]

STATEMENT OF THE WATER RESOURCES CONGRESS

I am Carl W. Riehn, General Manager and Executive Director of the North Texas Municipal Water District, but today I appear before you as the Chairman of the Water Resources Congress, an association which had its beginning in 1901. We represent all phases of water resources development and conservation with members spread across the United States. This marks my second year as WRC Chairman and for me, the past twenty-four months have been exciting as well as rewarding. The most note-worthy accomplishment in water resources development and conservation was the enactment of the Water Resources Development Act of 1986, which received the strong support of the WRC and this Committee.

We view the future with optimism and confidence. The WRC is actively trying to work with all sectors of the U. S. Economy to effectively promote a continuation of Water Resource Development for the benefit of the U. S. Citizens. With your help and continued guidance an even better and stronger United States Water policy can be determined.

As an individual who works as a water supplier for more than 750,000 people, I am impressed with the previous federal inventory of millions upon millions of acre feet of water developed for flood control, navigation, hydroelectric power, irrigation, recreation and water quality control projects that this Congress and the lawmakers who preceded you had vision to develop for the benefit of our citizens.

Water Resources Congress is proud to have been in on the ground floor of support for these major river basin developments. But we also know that without the support of this Committee our yearly trips to Washington would have been reported back home as walks on the Mall, visits to the monuments and a T-shirt with the message "close but no cigar".

And so, Water Resources Congress continues to endorse the civil works budget of the Corps of Engineers and the proposed expenditures of the Bureau of Reclamation. We note with satisfaction the Fiscal Year 1989 new starts in the Corps budget under surveys, preconstruction engineering and design, construction as well as the Mississippi River and Tributaries projects.

We are pleased with the budget recommendations for Mobile Harbor, Threemile Creek and William Bacon Oliver Locks and Dam all in Alabama; the Phoenix flood control budgeted amount; the California project listing headed by the big Santa Ana flood control project; Westerly Creek flood control project in Colorado; the Central and Southern Florida development; Richard B. Russell Dam and lake in Georgia and South Carolina; and the twin items for Lock and Dam 26 and the second lock on the Mississippi River near Alton, Illinois; the much needed hurricane protection projects and the Red River Waterway projects in Louisiana; the long-awaited Baltimore Harbor improvements; the Tombigbee River and tributaries project; the Blue River channel in Missouri; Papillion Creek and tributaries in Omaha, Nebraska; Portsmouth Harbor in New Hampshire; Kill Van Kull and Newark Bay channel in New York and New Jersey; Falls Lake, North Carolina; Souris River Basin flood control in North Dakota; Mill Creek, Ohio; Bonneville Navigation Lock on the Columbia River in the Pacific Northwest; and Grays Landing Lock and Dam 7 in Pennsylvania; Charleston, South Carolina

Harbor; and in my home state, Boggy Creek, Austin, Texas; Cooper Lake and channels, Texas; Freeport Harbor, Ray Roberts and the San Antonio channel job, all in Texas; the Mount St. Helens sediment control project in Washington and not to be overlooked Gallipolis Locks and Dam in West Virginia.

Water Resources Congress applauds the efforts of the Department of the Interior to reorganize the Bureau of Reclamation. We understand the plan will point the Bureau in a new direction in its mission to meet the water resources needs in the Western States. To our association the key is meeting the water needs. Everything else is secondary.

Our approval of the Bureau's budget rests with continued progress on such projects as the Bonneville Unit in Utah; the Central Arizona Project; California's Central Valley Project; the Colorado River Basin Salinity Control Projects in Arizona, California and Colorado; the Dolores Project and the Fryingpan-Arkansas Projects in Colorado; and the Garrison Diversion Unit in North Dakota - that project which we have all grown old waiting for the completion sign to be displayed.

We also favor budgetary amounts for the North Loup Division in Nebraska; the Salt River Project's Stewart Mountain Dam in Arizona and the San Luis Valley Projects in Colorado.

Now I would like to report on a Survey of National Water Issues conducted by the Water Resources Congress as a guide for future directions. Last year the Water Resources Congress undertook a nationwide survey on wide ranging issues involved with water resources. We have found, with the many changes effecting the roles of Federal and State Governments in development and use of water resources, that the issues are broad, the opinions sometimes diverse and both have wide ranging effects on the people who rely on the water resources of this nation for business, for pleasure and for essential water supply.

The Water Resources Congress mailed over 3700 surveys to members of organizations and companies who are actively interested in the use and protection of water resources including several environmental organizations. Over the course of a six month period we received more than 10% of the surveys mailed. The results have proven interesting.

Based on a majority or plurality of survey respondents the following positions appear to exist: (these are not the positions of the Water Resources Congress, but the summary tabulation from the survey)

1. Development of water transportation should be increased, and improved operational standards for waterway commerce should be implemented. Additional federal regulation does not appear to have support, however.

2. Privatization was not favored in Water Resource Management due to a perceived lack of security for customers. The continued role of government in water resources was still held to be necessary. Sixty-three percent of the respondents, though, maintained that State Governments need to become more involved in order to balance what is seen as Federal intervention in previously local concerns. Survey respondents tended to hold the view that abusive interpretation and enforcement of regulations created more difficulties for industry in the U. S. than the cost of compliance, perhaps because the cost is passed on to consumers.

3. In the Environmental and Wildlife section, 64% felt that mitigation was a fair procedure which should be expanded. Also, according to almost three-fourths of the respondents, the construction of waterways and lakes has increased and improved recreation potential. Inland water project users were called upon to take the lead in assuring that a balance is maintained in downstream bays and estuaries.

4. Hydropower was seen as a power alternative that will become increasingly important. At the same time, though, a majority of responses favored tax incentives to encourage the development of alternative water resources for industry. The cost of irrigation should be related in some way to the cost of the product, and the development and implementation of conservation techniques in agriculture were also supported.

5. Three areas where the Federal government is currently involved were supported by the majority: a) Rebuilding from natural disasters, hurricanes, and beach erosion; b) Enforcing FEMA regulations restricting development of flood plains; and c) Assuring the safety of dams. A large majority believe that the costs of flood control projects have been repaid many times over in the value of lives and property saved.

The diversity of the interests in water resources means that the viewpoints are not always in agreement and that on occasion the best interests of the majority may adversely affect the minority. However, even more significantly the survey has indicated to us that the major task to be addressed nationally is communication with the American people and United States Congress on the value of water resource development. At the same time, this education and communication process must extend to the water professionals as well, so that these diverse groups can understand the issues and the implications for all groups who use water resources. An example is agricultural groups that believe more fuel fees should be placed on barges, but increased subsidies for irrigation.

It is our intention that in the months and years to come, the Water Resources Congress will tackle this challenge by continuing to develop programs that will address the problems of water resource development and attempt to provide the means to communicate the great dependency that exists on our water resources for an improved economy and life-style for Americans everywhere. Likewise, there may be no greater hazard than a misunderstanding of these opportunities, challenges, and the consequences of actions taken or not taken in the years ahead.

STATEMENT OF THE NATIONAL COAL ASSOCIATION

SUMMARY

The National Coal Association (NCA), whose member companies produce approximately two-thirds of total coal mined in the U.S., respectfully urges the members of the Appropriations Subcommittee on Energy and Water Development to provide funding for orderly, timely construction of navigation improvements needed to preserve the capacity and efficiency of the inland waterways system. The subcommittee has demonstrated diligent leadership with regard to that national goal during 1980's. Now, as we approach Fiscal Year 1989 and enter into the 1990's, the urgency of continuing the replacement of obsolete locks and dams will be heightened in order to enhance the competitiveness of bulk commodities transported on the waterways system for consumption domestically as well as in world trade.

Coal, along with other commodities including grain, minerals, chemicals, and petroleum products, is a major user of the inland waterways system for access to utility and industrial plants in the U.S. and for reaching export markets through the Gulf of Mexico. In 1985, according to the U.S. Army Corps of Engineers, 147.1 million tons of coal were transported on the waterways system. Coal traffic is projected to increase 2.3 percent yearly from 1985 to the year 2000, resulting in a projected volume of 207.5 million tons of coal handled by barges annually by the turn of the century, a growth in annual volume of 41 percent. That compares well with NCA forecasts of coal production, consumption, and exports. We forecast annual domestic consumption of coal will increase by 30 percent from 1987 to the year 2000, and similarly U.S. coal exports will experience a 30 percent growth in the same years. Due to the efficiency and competitiveness of waterways transportation, NCA believes that its share of total coal transoortation will expand,exceeding one out of every five tons of coal shipped at present. Taking this into account, and in consideration of the National Waterways Study as updated by the Corps of Engineers, together with recent studies performed by its divisions, NCA urges the subcommittee to provide appropriations for the following projects:

Inland Waterways Project	Description
Ohio River - Gallipolis	Lock and Dam Replacement
Ohio River - Olmsted	Replacement of L&D 52 and L&D 53
Black Warrior River - Oliver	Lock and Dam Replacement
Monongahela River - Gray's Landing and Point Marion	Replacement of L & D 7 and L & D 8
Kanawha River - Winfield	Lock and Dam Replacement
Mississippi River - L&D 26	Replacement of Lock and Dam, and Addition of Second Lock Chamber

NCA FORECASTS SHOW STEADY GROWTH IN COAL PRODUCED IN THE U.S. FOR DOMESTIC CONSUMPTION AND EXPORT.

Today about one in every five tons of coal shipped from mines to utility and industrial plants in the U.S. or to ports along the Gulf of Mexico is carried in open hopper barge tows for part of the movement. NCA believes that share of total coal traffic handled on the inland waterways system will hold steady, and possibly increase from now through the year 2000. Coupled with the rise in coal production and consumption forecast by NCA through the year 2000, the inland waterways are expected to handle substantially higher tonnage of coal in the 1990s.

Total domestic consumption of coal, as reflected in the table included in the testimony, is forecast to grow from an annual level of 836 million tons in 1987 to nearly 1.1 billion tons by the year 2000, an increase of approximately 30 percent. Exports are forecast to rise from 79 million tons in 1987 to 102 million tons annually by the year 2000, a similar growth of about 30 percent. Over the same period, NCA forecasts annual coal production to increase from 917 million tons to nearly 1.2 billion tons, while imports rise to 5 million tons from the 2 million ton level last year.

NCA's coal production and consumption figures are similar to projections of the U.S. Army Corps of Engineer's Institute for Water Resources which estimates growth in coal traffic on the inland waterways from 147.1 million tons in 1985 to 207.5 million tons yearly by the year 2000, an annual growth rate of 2.3 percent and an overall increase of more than 40 percent. As reflected in the table, coal represented 27.5 percent of total traffic in 1985. Coal's share is expected to expand to 30.7 percent.

NEW AUTHORIZATION AND APPROPRIATIONS FOR THE OLMSTED PROJECT ARE CRITICAL TO ENABLE BULK COMMODITIES LIKE COAL, GRAIN, AND CHEMICALS TO BE COMPETITIVE

NCA's reason for urging that the Olmsted Locks and Dam project should be expedited are based: (1) on the fact that the obsolete structures at Locks and Dams 52 and 53 reduce the efficiency and safety of navigation on a critical portion of the Ohio River near its junction with the Mississippi River, and (2) on the increasingly higher volumes of river traffic projected at this location year-to-year through the year 2000.

The Ohio River, joining with the upper and lower portions of the Mississippi River, and linked with several other segments of the inland waterways system through its junctions with the Tennessee, Cumberland, Green, Kanawha, Monongahela, and other rivers, constitutes a lifeline for producers, consumers, exporters, and shippers of bulk commodities like coal, grain, and chemicals in a 14-state area within the Ohio River Basin. Coal is one of the major commodities carried on the Ohio River and its upper Ohio River basin tributaries. The Ohio River itself carried 98 million tons of coal in 1985.

The U.S. Army Corps of Engineers reports that at Lock and Dam 52 on the Ohio River more than 41.3 million tons of coal moved in 1986, along with 10.0 million tons of grain, 10.0 million tons of chemicals, and 24.4 million tons of other commodities. Coal represented more than 40 percent of total river traffic, 85.7 million tons. By coal origin, 42 percent came from Kentucky, 21 percent from Illinois, 15 percent from West Virginia, 13 percent from Indiana, 5.5 percent from Ohio, 2.75 percent from Pennsylvania, and the remainder from the other coal-producing states. Of the coal moving through Lock and Dam 52, 36 percent went to Louisiana, 11 percent to Florida, with the remainder to Kentucky, West Virginia, Illinois, Indiana, Ohio, Missouri, Mississippi, Alabama, Tennessee, as well as other states. Clearly, Lock and Dam 52 serves a significant number of states. The high volume to Louisiana and to Florida through Lock and Dam 52 illustrates both the attractiveness of river transportation for long-haul movements, and the value of the Ohio and Mississippi Rivers as a conduit to the Gulf Coast Region for U.S. coal exports.

NEW RIVER TERMINAL IMPROVEMENTS AND ADVANCES IN WATER CARRIER OPERATIONS SIGNAL CONTINUING ATTRACTION TO THE WATERWAYS

The mid-1980's have produced marked advances in water carrier operations exemplified by the utilization of computer systems to schedule tows and match towboats and barges in an optimal manner so that equipment, manpower, and terminal facilities are applied to the traffic at hand with maximum productivity. Strong inter-carrier competition and the availability of improved business management and communications systems in recent years have made these positive strides necessary and feasible. That, of course, inures to the benefit of waterways users and the public which ultimately bears the cost of transportation of bulk commodities like coal. Joined by construction of new and improved river terminal facilities for linking other surface transportation systems with barge fleets, those advances set the stage for completing the modernization of the inland waterways through the replacement of certain obsolete locks and dams which control the efficiency and safety of inland waterways operations.

NCA has carefully examined such needs throughout the 1980's, looking at the National Waterways Study (NWS) reported in 1981, updates of the NWS performed periodically by the Institute for Water Resources of the U.S. Army Corps of Engineers, testimony of the Assistant Secretary of the Army (Civil Works), the Chief of Engineers, and the Corps' division engineers, and the experiences of NCA's members in utilizing the inland waterways system. Based on such analyses,

NATIONAL COAL ASSOCIATION
COAL TRENDS AND FORECASTS

Volumes In Millions Of Tons In Selected Years

	1985	1986	1987	1988 (est.)	1995 (forecast)	2000
Domestic Consumption						
Electric Utilities	694	685	718	715	821	924
Metallurgical	41	36	36	34	43	45
Industrial/Retail	83	83	82	82	99	110
Total Domestic	818	804	836	831	963	1079
EXPORTS						
Canada: Steam	9	8	10	7	9	9
Met	7	6	6	6	8	8
Total	16	14	16	13	17	17
Overseas:						
Steam	23	23	18	18	27	35
Met	53	48	45	43	48	50
Total	76	71	63	61	75	85
Total Exports:	92	86	79	74	92	102
PRODUCTION						
East	559	564	580	568	644	697
West	325	326	337	330	407	479
Total	884	890	917	898	1051	1176
IMPORTS	2	2	2	2	4	5

U.S. Inland Waterways Traffic
Projections (millions of tons)

Coal	1985	1995	2000	Annual % Growth' 85-2000
	147.1	192.0	207.5	2.3%
Petroleum Products	100.4	109.5	115.6	0.9%
Nonmetallic Mineral	75.6	79.5	81.5	0.5%
Farm Products	70.6	91.7	103.2	2.6%
Total Traffic	534.6	629.9	675.5	1.6%

Source: U.S. Army Corps of Engineers, Institute for Water Resources, Status of the Inland Waterways, Appendix A, September, 1987.

NCA believes that it is timely for the Congress to establish priorities for construction and funding of inland waterways improvement projects to be started during the period, 1989 to the year 2000.

NCA'S RECOMMENDATIONS ON INLAND WATERWAYS PRIORITIES

Mr. Chairman and members of the subcommittee, NCA respectfully recommends that the Congress establish priorities for inland waterways navigation improvements in the period, 1989 to the year 2000, and consider including the projects outlined below:

1. Continuing appropriations for inland waterways construction projects at:

   Gallipolis on the Ohio River,

   Gray's landing on the Monongahela River,

   Point Marion on the Monongahela River,

   William Bacon Oliver on the Black Warrior River,

   Winfield on the Kanawha River, and

   L & D 26 on the Mississippi River (main lock and auxiliary lock chamber).

2. New authorization and appropriations for inland waterways construction projects at:

   Olmsted, Illinois on the Ohio River (replacing L & D 52 and L & D 53 at a new location),

3. New authorization for waterways construction projects at:

   Kentucky L & D on the Tennessee River,

   L & D 2, L & D 3, and L & D 4 on the Monongahela River,

   Marmet L & D on the Kanawha River, and

   Dashields, Emsworth, McAlpine, and Montgomery on the Ohio River.

In conclusion, NCA wishes to express the coal industry's warm appreciation for this opportunity to present our views for consideration by the subcommittee. We stand ready, and will sincerely welcome, opportunities to furnish more information as may be required in your deliberations.

STATEMENT OF THE INTERSTATE CONFERENCE ON WATER POLICY

The Interstate Conference on Water Policy (ICWP) is the independent national association of state, interstate, and regional water administrators concerned with water quantity and quality management, conservation, and development. Since 1959, ICWP has been the voice for state water resource management concerns, particularly with regard to the relationship between state and federal programs, regulatory authority, and information exchange.

ICWP has long been committed to a cooperative partnership approach to solving this nation's water resource problems. This partnership requires a non-federal commitment by state and local community sponsors and a federal commitment by the Corps of Engineers and other federal water resource agencies. The Corps of Engineers FY 1989 budget is of particular concern to ICWP. The maintenance of a healthy and viable partnership requires that the Corps of Engineers as our federal partner has the means to fulfill its responsibilities under the law.

ICWP is particularly concerned about the proposed budget for a) dam safety, b) Section 22 planning assistance, and c) small project authorizations.

A. DAM SAFETY

Last year, ICWP's testimony on the proposed FY 1988 Energy and Water Development Appropriations stated a particular concern over the apparent lack of initiative with regard to dam safety programs authorized in Title XII of the Water Resources Development Act of 1986, P.L. 99-662. In fact, of all the dam safety provisions in the Act, the Corps of Engineers selected to pursue only the dam inventory update.

Besides the dam inventory update, P.L. 99-662 authorized a number of other significant and potentially very useful programs for guaranteeing the safety and structural integrity of dams in this country. In FY 1989, it is imperative that funds be appropriated to enable the Corps of Engineers to initiate the following authorized programs to ensure the future structural integrity of dams throughout the U.S. and to protect lives and property from the devastating results of dam failures.

State Dam Safety Programs

The Corps of Engineers is authorized to provide grants to assist states in establishing and/or maintaining effective programs to ensure dam safety to protect human life and property. Significant state commitment is required as well because the state must provide funds for at least 50 percent of the program costs. A National Dam Safety Review Board is to be established to review and monitor the program.

In 1986, ICWP conducted a survey of state dam safety officials to identify state program needs to define the appropriate federal role in the area of dam safety. Financial need was overwhelmingly cited as the most urgent need in maintaining a viable state dam safety program. Thirty (30) of the 42 states responding to the survey rated the state grant program of P.L. 99-662 as "high priority."

Training

The Corps of Engineers is also directed by P.L. 99-662 to provide training for state dam safety inspectors at the request of any state with an approved dam safety program. ICWP's 1986 survey of state dam safety officials verified the fact that this is a critically important need. When asked how federal assistance can most beneficially be channeled to states, 31 of the 42 responding states rated training as a #1 or #2 priority. Respondents also viewed the training assistance provisions of the Dam Safety Program in P.L. 99-662 as the most helpful to them, giving it an average rank of 1.7 on a scale of 1 to 5, with 1 being the highest score. Clearly, training is a critical need and one for which the states look anxiously to the federal government for assistance.

The proposed FY 1989 budget for the Corps of Engineers includes no funding for training of state dam safety inspectors. ICWP urges that the full $500,000 authorized for appropriation be provided and that the Secretary of the Army be directed to offer such assistance to qualifying states.

Research

The Corps of Engineers is further directed by P.L. 99-662 to undertake a program of research to develop improved techniques and equipment for rapid and effective dam inspection. This program was intended to closely complement the training efforts of state inspectors. All applicable technical advances need to be investigated for future effective dam safety inspection.

The proposed FY 1989 budget for the Corps of Engineers includes no funding for dam inspection research. ICWP urges that the full $2 million authorized for appropriation be provided and that the Secretary of the Army be directed to undertake the research program as authorized including opportunities for state participation.

B. SECTION 22 PLANNING ASSISTANCE

Section 921 of P.L. 99-662 increased the authorized annual funding level for the Section 22 Planning Assistance to States Program that was established in 1974 from $4.0 million to $6.0 million nationally and from $200,000 to $300,000 for each state. Throughout its history, the Section 22 Program has yielded a wide variety of state-selected products that have been invaluable in supplementing the water resources management capability of all the states.

An obstacle to full implementation of the Program has been the approval of annual appropriations at less than the authorized level. In FY 1987, $3.1 million was appropriated and $3.2 million (including transferred funds) was expended. In FY 1988, $3.8 million was appropriated, and the administration has requested $4.5 million for FY 1989. These figures are well below the $6 million that was authorized in P.L. 99-662.

Because many states continue to experience budget reductions and the loss of capability to carry out needed water planning and management activities, the expanded Section 22 Program established in P.L. 99-662 has the potential to contribute significantly to maintaining stable water resources management programs at the state level. Therefore, ICWP encourages Congress to appropriate the full $6.0 million authorized in P.L. 99-662 and to further direct that the Corps' Section 22 lead districts reasonably and equitably distribute the funds for use by each state during FY 1989.

C. SMALL PROJECT AUTHORIZATIONS

During the past 40 years, the Corps has completed numerous projects throughout the United States under the Small Project authorities contained in various pieces of federal authorizing legislation. This includes small flood control projects, clearing and snagging operations, emergency bank protection works, navigation projects, and beach and shore protection. In fact, small projects have represented the only new construction starts in some states since 1970.

Section 915 of P.L. 99-662 provided increased national and individual project funding levels for seven different Small Project authorizations. In FY 1987, $56.8 million was appropriated and $47.1 million was expended. In FY 1988, $60.5 million was appropriated, and the administration has requested only $57.0 million for FY 1989. Because of the great success of the Small Project programs in actually addressing water resources problems, ICWP urges Congress to appropriate an increase over FY 1988 funding levels for the Small Project authorities in Section 915 of P.L. 99-662.

SUBCOMMITTEE RECESS

Senator SPECTER. That completes the morning session and we will resume with public witnesses at 2 p.m. in this room. Thank you.

[Whereupon, at 11:35 a.m., the subcommittee was recessed to reconvene at 2 p.m. the same day.]

(AFTERNOON SESSION, 2:15 P.M. TUESDAY, APRIL 12, 1988)

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator JOHNSTON. The subcommittee will come to order. We entertain, welcome and hear from large numbers of witnesses from all over the country on Energy and Water Subcommittee, and those witnesses, by-and-large, are the people who build America, whether they be from the Mo-Ark Association, which we heard from yesterday, or from the Far West, or California. But there's no group as outstanding, as qualitative, as fine, as upstanding, as smart, as intelligent as this group here today. So, I want to give you a special welcome.

We do have a large number of very good looking, smart people here so, therefore, we want to ask that when we get around to recognizing you to testify that you hold your testimony to a minimum so that all of those scheduled may be heard. I think you have each been assigned a time here, so I want to admonish you to do that.

I will not admonish my colleagues to hold their time down. They can speak just as long as they wish. The first one to arrive today was the most outstanding Senator that Arkansas has ever had, David Pryor. [Laughter.]

ARKANSAS WATER RESOURCE PROJECTS

STATEMENT OF HON. DAVID PRYOR, U.S. SENATOR FROM ARKANSAS

Senator PRYOR. Mr. Chairman, I feel that I ought to yield to my senior colleague, Senator Bumpers. But, I would like to say, because he is a member of this committee, that one reason Senator Bennett Johnston, our distinguished chairman, is in such a jovial, good, receptive, congenial mood today is that the Senate Majority Leader Robert C. Byrd just announced 18 minutes ago that he was not seeking reelection.

I happened to be with Senator Johnston as the press nabbed him, and Senator Johnston has just announced his bid for majority leader of his Democratic colleagues in the U.S. Senate. So, that's one reason why he's in such a good mood. [Applause.]

Mr. Chairman, I am not going to make a formal statement today. I am going to submit my remarks for the record.

However, Mr. Chairman, we want to thank you for the help that you have been to our part of this great country in the past, not only the past few years, but in the past decades, in your years of public service.

This committee has been extremely sensitive over the years to water development and the enrichment of our water resources. This com-

mittee has been extremely sensitive to those areas of our state that have been devastated, not only by flood and tornado, but also by poverty. We also think of certain areas of the state of Arkansas, in the Lower Mississippi, for example, where there probably is the highest poverty rate and highest poverty level of any area in our country today.

It is the country's new Appalachia. I just want to commend my colleague and friend, Senator Bumpers, for his introduction 2 weeks ago, of a bill creating a study commission to look at the problems of the lower Mississippi River Valley, which I cosponsored, as did most of the members here.

We have many projects, Mr. Chairman, and I feel, if I start mentioning those projects, I'm going to get in trouble. I feel that I will certainly miss some, but there are one or two that I would like to just call to your attention.

HELENA HARBOR, ARK.

One is the Helena Harbor. We truly feel that once again the administration is going to try to find ways not to go through with the Helena Harbor construction. We hope that, through the continued pressure of this committee, and the wisdom and the judgement of this committee, that the harbor is going to go forward.

YELLOW BEND PORT, ARK.

Also, Mr. Chairman and my colleagues, we feel very strongly that the Port of Yellow Bend project in the southeastern part of our state was committed years ago, and through your help, Mr. Chairman, as you know, that project can be underway. We need additional cooperation from the Corps of Engineers and others.

We have the West Memphis flood control problem, the DeQueen water supply problem, and concerns along the Red River. We have the Arkansas River basin, Mr. Chairman, and the Quachita River Valley, my home area of the state of Arkansas, both of which have special needs.

Once again, these are projects that are greatly needed. These are projects that this committee has been sensitive to in the past. And once again we come, respectfully, Mr. Chairman, and my colleagues to ask and seek your help in this great investment in the future of our water resources and our country.

Finally, the good citizens of Hempsted County, Hope, Ark., home of not only fine people, but the world's biggest watermelons, have asked me today to present you this gift box, and in this gift box is something extremely magic. They have presented you with special seeds of the famous Hope watermelon.

We think that they will grow, not only in Louisiana, but also in McLean, Va., where you live and, if you need any help in getting these watermelons to grow, the Hope Chamber of Commerce has promised to send a man named Mr. Pod Rogers, not only to plant these seeds but to cultivate them and make sure that they are nourished properly.

So, I do give you, on behalf of my constituents, a box of Hope watermelon seeds, Mr. Chairman, with their good blessings and good memories.

Senator JOHNSTON. Thank you very much, David, and thank you my good Arkansas friends for sending me these watermelon seeds. I am, as a matter of fact, a watermelon fan. If you have never had those watermelons from Hempsted county, they are incredible. In fact, I want to go back up there to eat them. I don't know whether I can grow them. I understand Dale Bumpers is quite a gardener, maybe I can get him to come help till the soil. Thank you very much.

[The statement follows:]

STATEMENT OF SENATOR PRYOR

Mr. Chairman,

It is my high honor and personal privilege to appear before this committee alongside the representatives of the Red River Valley Association, the Arkansas River Basin Interstate Committee, the Ouachita River Valley Association and the Lower Mississippi River Valley Flood Control Association. On behalf of our friends and constituents from these areas of Arkansas and the surrounding states I thank you Mr. Chairman for your diligence in helping guide the Senate through some very difficult economic times in recent years while managing to keep our nation's public works programs moving forward. It is no small accomplishment, and you and your staff are to be commended. I know our constituents from these areas of the lower Mississippi River Valley and the Arkansas River Basin, who are here today, fully recognize and appreciate your efforts.

HELENA HARBOR AND PORT OF YELLOW BEND

Mr. Chairman, this past year this Committee took decisive action on two harbor construction projects in Arkansas situated on the Mississippi River that I believe are absolutely crucial to economic recovery in the Mississippi River Delta region. I speak of the Helena Harbor project, which was authorized in the Water Resources Development Act of 1986, and the Port of Yellow Bend, which was authorized under Section 107 of the Chief of Engineers' continuing authority. The Committee acted on these projects in the face of opposition from the Administration, and that kind of courage ought to be recognized.

How the Reagan Administration can continue to oppose economic development for a seriously depressed region of our country on the one hand, and tout economic recovery as a tenet of Reagan achievements remains a mystery to me.

Mr. Chairman, I anticipate continued efforts by this Administration to avoid the initiation of construction of the Helena Harbor project, and I want to assure you that this Senator is going to continue his unwavering efforts to see it constructed.

I hope and ask that you continue your support and ensure that this Committee directs, in language and funding, the Army Corps of Engineers to move forward swiftly with their design plans and specifications and be prepared to commence construction in FY 1989.

I believe that the Corps is committed to constructing the Port of Yellow Bend, Mr. Chairman, and I ask only that this Committee honor its committment to provide the remaining federal funds necessary to complete this small harbor project. I anticipate that a local cost-sharing agreement will be enacted in the next several months, and the Chief has indicated to me that he expects groundbreaking next spring.

WEST MEMPHIS FLOOD CONTROL

Mr. Chairman, last December a devastating tornado ripped through West Memphis, Arkansas killing six persons and damaging millions of dollars in property. I spent a day touring this damage and I can personally report to you that the suffering I saw should never again be visited on such a community. West Memphis' problem was exacerbated ten-fold by torrential rains that came during the clean-up. Twice during December and January West Memphis suffered flooding as it tried to come to grips with the human and institutional problems caused by the tornado.

The Water Resources Development Act of 1986 authorized the construction of improvements to the Ten and Fifteen mile Bayous that traverse Crittenden County and West Memphis. These projects, if constructed, offer the potential to greatly relieve this problem in this area of Arkansas. I support them. The difficulty lies in the new cost sharing provisions provided in that Act. Mr. Chairman, the City of West Memphis is simply not in any position to meet the cost-sharing requirements that this Act imposes.

The Act gives the Assistant Secretary of the Army the authority to establish rules for adjusting the cost sharing provisions on a case by case basis. I am not aware if those rules have been

developed as yet, although there has been ample time alloted for that. In my judgement, if this country ever places itself in the position where only wealthy cities and counties can afford to participate in federal projects, while our poorer, more economically depressed regions are left to go it alone, we will be abandoning the basic principles of our democracy and dividing our country, rich against poor.

Mr. Chairman, these flood control measures properly belong under the authorization of the St. Francis Flood Control Project, and were so recommended at one time by the Mississippi River Commission. Unfortunately the Water Resources Development Act of 1986 came along at a time when many projects in economically deprived areas were swept up into the umbrella of increased local cost sharing provisions. I realize that this Committee cannot address questions that properly belong in front of the authorizing committees. I ask that this Committee take appropriate actions to 1) ensure that the Assistant Secretary closely examines the situation at West Memphis with a view toward adjusting the cost sharing requirements for these projects to a level that local interests can afford, and 2) provide a level of funding in the FY 1989 appropriation bill commensurate with the Corps of Engineers' capability to initiate construction.

DeQUEEN WATER

Mr. Chairman, the Corps of Engineers is negotiating with the City of DeQueen, Arkansas for the purpose of selling water from DeQueen Lake to the City for municipal water supply. This process has taken a severe turn with the new calculations of the costs of water tripling since the initial agreement to sell water in 1982. The Corps cites new standards set forth in policy from the Assistant Secretary's office.

This policy will likely send the City of DeQueen to a source of water downstream from the release point of DeQueen Lake.

I find it utterly ridiculous, Mr. Chairman, that water sold from federally constructed water projects must be sold at prices triple the costs of a city moving its intake several miles further away. These projects must be multiple purpose in concept, design, and operation, and we are allowing policies emanating from one office to destroy that concept. Just where does the Corps of Engineers plan to go to sell water from DeQueen Lake at the prices they are demanding? Texas?

I ask this Committee to seek a solution to this problem at DeQueen Lake with the Assistant Secretary, utilizing Committee language or other means to communicate the sense of Congress that these multiple purpose projects must not be held hostage by intractable policies and regulations.

RED RIVER CONCERNS

Today you will hear testimony from representatives of the Red River Valley Association detailing the concerns they have about future development of that waterway. I wholeheartedly support their recommendations, and I know, Mr. Chairman, that this Committee will be sensitive on these issues.

In Arkansas we are particularly interested in the Red River Emergency Bank Protection project, which also covers segments of the river in Louisiana, Oklahoma and Texas. This Committee has shown tremendous insight and concern for our future in recent years in providing funding annually for this project when the Administration's budget architects have zeroed out funds for it. This year the Red River representatives are asking that the Committee provide $4,200,000 in FY 1989 for this project, and I find that relatively modest level of funding entirely reasonable. I sincerely hope that the Committee can accomodate this request.

In conjunction with that request I also urge the Committee to include report language instructing the Assistant Secretary of the Army to initiate continuing contracts for the construction of the Bear and Brown Realignments and the Slay Bend Revetment with funds proficed in FY 1989. I believe that you will be provided with specific language from the Red River group detailing this

request in the bill and in the report. This will clarify for the Assistant Secretary exactly what is needed and I wholeheartedly solicit your support for its inclusion in this legislation.

Two other projects deserve mention at this time. The Red River Below Denison Dam Comprehensive Basin Study should be funded at full Corps of Engineer capabilities in FY 1989. This study affects four states and will determine the future uses of the river. Also the Red River Waterway, Shreveport to Index, Arkansas should continue it's preconstruction planning at a level of $50,000. I fully endorse the other requests and recommendations of the Red River Valley Association and join in asking the Committee to fund them. These are projects and requests of a relatively small nature, but meaningful to the interests involved.

ARKANSAS RIVER BASIN

Mr. Chairman, the representatives of the Arkansas River Basin Interstate Committee will present testimony to you outlining their recommendations for funding in FY 1989 for several concerns, along with other suggestions for making the McClellan-Kerr Arkansas River Navigation System an improved waterway. I urge the Committee Members to carefully consider each of their recommendations. I support the President's budget for construction, operation and maintenance for the McClellan-Kerr system.

I feel compelled to single out one particular concern of mine at this time. The Army Corps of Engineers is undertaking a comprehensive study of the Arkansas River Basin in an attempt to resolve problems related to navigation, flood reduction, and municipal, industrial and agricultural water supply in the states of Oklahoma and Arkansas. Both states are cost-sharing in this study, and it offers hope in resolving some serious problems. I am hopeful that this Committee will see fit to continue the necessary federal funding for this study.

I would also call the Committee's attention to the recommendations of the representatives in regard to tow haulage equipment and the need for a solution to the annual low water

problem on the Arkansas River at the mouth of the White River. The Corps of Engineers is studying this problem, and, hopefully, we will have their findings available at an appropriate time in the future.

Ouachita River Valley

Mr. Chairman, I ask that this Committee continue to support the President's budget proposal for construction, operation and maintenance for the Ouachita-Black River Navigation System. I know you are a supporter of this waterway, and I share your views on it.

Last year I wrote to the Secretary of the Army to inquire about the Army's position with respect to military usage of the Ouachita River. In Camden, Arkansas, my hometown, the Vought Corporation produces the Multiple Launch Rocket System for the Department of the Army. The Vought Corporation completed a study, at the request of the Army, in the early 1980's that determined that the Army could save millions of dollars annually by shipping the rockets for this system by water through the Port of New Orleans. Camden has a port facility and the Corps of Engineers, a branch of the Army I am told, has spent hundreds of millions of dollars in the past twenty years developing the Ouachita River for navigation. I understand that the Port of New Orleans has resolved an earlier problem with respect to the shipment of explosives, and a shipment of this nature could be made.

I believe that we in the Congress need to pursue the maximimum utilization of federally constructed waterways, particularly when a savings of tax dollars is in the offing. I have not heard back from the Secretary, and I urge this Committee to raise the question of why we are not using the Ouachita River for these shipments in the face of a study that indicates a substantial savings could be made. Unless there is more to it than we are allowed to know at this time it appears that the Army is not doing much communicating internally.

STATEMENT OF HON. JOHN BREAUX, U.S. SENATOR FROM LOUISIANA

Senator JOHNSTON. Next in order of when they came in is my compadre from Louisiana. He is a member of Environment and Public Works which authorizes these projects that we later fund. So, we like to give it the old one-two, Senator John Breaux.

Senator BREAUX. Thank you, Mr. Chairman. I mean, Mr. Leader, or is it Mr. Chairman? [Laughter.]

Senator Pryor, if you had been smart, you would have presented Bennett not with the seeds, but the finished watermelon. You wouldn't have to go through the process.

I thank all of the witnesses that are going to be here and all the people who have traveled to present testimony before the committee today. It is extremely important to have your involvement.

We are in a period of some very tight budget contraints on this committee and I know our colleague, my senior Senator, is going to do the very, very best that he possibly can, but in a time of tight budgets and great needs, it is going to be a real difficult situation that we face.

My argument, Mr. Chairman, to the committee is that in those types of situations, we have to start setting some priorities. You know, the Mississippi Valley—Louisiana, Arkansas, and Texas, the whole valley—drains 41 percent of all of North America through our borders. When it rains in the North, we flood in the South. Really that, I think, is a very high priority.

We in Louisiana are losing something like 55 square miles of our state every year. If that continues, David and Dale, we are going to be brushing up against Arkansas as a coastal state before too long. That should not happen.

This committee, through the appropriations process, can work wonders with selecting the high-priority projects which are going be presented here this afternoon. I strongly support them. I think they are justifiable. The rest of the country has to realize the great contribution that the entire Mississippi Valley makes every day. I think that certainly justifies the expenditures that are being requested and I support the requests.

Senator JOHNSTON. Thank you very much, John.

STATEMENT OF HON. DALE BUMPERS, U.S. SENATOR FROM ARKANSAS

Senator Dale Bumpers, the second most outstanding Senator in Arkansas.

Senator BUMPERS. Mr. Chairman, I want to say, first of all, I don't know whether the applause was because of Robert C. Byrd's announcement that he would not run or because you are running. [Laughter.]

But, I can tell you that I don't mean that in any way to denigrate anybody, but I do want to say that when you seek mine and Senator Pryor's support for the leadership, we will, of course, want to visit with you about the merits of these projects. [Laughter.]

Mr. Chairman, I can tell you, looking out through the audience, in my state, and I am sure this is true of Mississippi and Louisiana and

the other state representatives here this afternoon, you are looking at the movers and shakers in my state, the people who fight daily and against overwhelming odds for economic development, in large measure from an area which you now know as a result of that bill Senator Pryor mentioned a moment ago as one of the most persistent, pervasive poverty stricken areas in the nation. It was the collapse of the agricultural economy, I guess, which really drove home to me the severity of the problem and the fact that Congress had never really committed itself to doing something for that area.

We have been dumping anywhere from $150 to $350 million a year on the Appalachian area for the past 23 or 24 years now and, if you look at the charts on where poverty is in this country, you will see that the lower Mississippi Valley, with some exceptions, from the southern tip of Illinois to the mouth of the Mississippi in New Orleans, you will find a vast majority of the 11 million people in my study area there, live below—not the majority, but 40 percent or more of the 11 million people live below the poverty level. These projects are absolutely critical not just to that bill, but to the economic welfare of the people in those areas.

Having said that, Mr. Chairman, I ask unanimous consent that my formal statement as submitted be included in the record and, just to simply add to what Senator Pryor has already said, I want to say that the President very wisely decided not to ask for rescission of the money for Helena Harbor and Yellow Bend Port, and some of the others that he had talked about.

You see, he doesn't know where Helena is, and he doesn't know where Yellow Bend is, and he doesn't know how people live, and he doesn't know how important these projects are to these people.

I think that is tragic from his standpoint, but it is our job to make sure that those harbors are funded and there is $5.3 million standing in this budget for the Helena Harbor. We have worked. I can tell you that I have been working for Helena Harbor since the day I was sworn in for my first term to the U.S. Senate and we are now about to see something actually happen down there that is going to mean so much to those people.

And, Yellow Bend and Pine Bluff, now we are going to work on that, and in our bill we envision that ports and a bridge or two and things like that are going to make a vast difference in the lower Mississippi. It ought to be the most prosperous area in America with that tremendous resource there.

Mr. Chairman, I established the Red River Commission when I was Governor of Arkansas and all our Red River commissioners are here. I don't have to tell the chairman about the Red River—that is one project I know he understands.

I went with him just to show the flag down to Alexandria, La., to dedicate lock and dam No. 2 the other day, because I want that navigation right on up through Texarkana and up to Denison Dam. And all I got from my efforts was a bad story about riding on a Corps of Engineers plane down there.

But, I will take all of those bad stories that some reporter wants to write about a Corps of Engineers jet, if we get the Red River navigable, which we certainly are going to do. I might also say that the chairman of this subcommittee is Mr. Red River. I don't know whether the people of Louisiana fully appreciate it or not, but I can tell you that he has been the mover and shaker on that project and he will continue to be, and I promise you, as long as he is here, that project will stay on track.

One other thing, Mr. Chairman, for the past several years the Corps of Engineers comes over here with a proposal to abolish further construction authority on the McClellan-Kerr Arkansas navigation system. We still have lots of work. We have a problem down at the mouth of the White River and we may very well wind up having to build another dam down there. I can tell you that, if there is any suggestion here of eliminating the authorization for that project, I will vigorously resist that as I have in the past.

West Memphis, Ark., Flood Control Project

Having said all that, Mr. Chairman, I can tell you that we have the mayor of West Memphis here with us, seated before you, Mayor Keith Ingram. Some of you may remember that West Memphis was devastated in December by one of the worst tornadoes ever to hit our state. I went down there and toured the area with Mayor Ingram. He is just a youngster, but he has been just about the most effective public servant I have ever seen, particularly in dealing with that crisis.

Immediately after the tornado, $50 million in damage, they got hit with a perennial problem and that is flooding, and West Memphis has staggered year-after-year because of a preventable flooding situation.

I am not going to dwell on it, because the mayor will do it much more articulately than I could, but we simply must do something to provide relief for West Memphis, Ark., and as you might guess, it is always the poor people. It was the poor people whose homes were blown away in the tornado and it was the poor people that always have to be moved out when the flood hits them.

I hope the chairman and the members of the committee will be very attentive to Mayor Ingram's proposal.

Mr. Chairman, I thank you very much for allowing me to make these few remarks and I again ask unanimous consent that my formal statement be submitted for the record.

Senator Johnston. Thank you very much, Senator Dale Bumpers, and if there is anything I can ever do for you, please come by and ask me, the answer is yes. [Laughter.]

[The statement follows:]

STATEMENT OF SENATOR BUMPERS

MR. CHAIRMAN, I APPRECIATE THIS OPPORTUNITY TO INTRODUCE AND WELCOME THE MEMBERS OF THE VARIOUS RIVER BASIN ASSOCIATIONS AND COMMISSIONS, AND REPRESENTATIVES OF OTHER PROJECTS FROM ARKANSAS WHO ARE HERE TODAY TO TESTIFY BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT ON THE FY89 APPROPRIATIONS. I AM PLEASED TO NOTE THAT ARKANSAS MEMBERS OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION, THE ARKANSAS RED RIVER COMMISSION, AND THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE WILL BE TESTIFYING, AND I COMMEND THESE INDIVIDUALS FOR THEIR SELFLESS DEDICATION IN THE EFFORT TO ENHANCE WATER RESOURCES IN ARKANSAS AND THE NATION. ARKANSANS THAT WILL BE TESTIFYING INCLUDE MAYOR SAMMY BROCATO OF HELENA, ARKANSAS, MAYOR KEITH INGRAM OF WEST MEMPHIS, ARKANSAS, WALLACE GIERINGER REPRESENTING THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE, BARRY MCKUIN, PRESIDENT OF THE ARKANSAS BASIN ASSOCIATION, AND JOHN STROUD OF THE RED RIVER COMMISSION.

THESE INDIVIDUALS WILL EXPOUND ON THE PROJECTS INVOLVED, AND I URGE THE COMMITTEE TO GIVE SERIOUS AND FAVORABLE CONSIDERATION TO THESE PROJECTS WHICH ARE VITALLY IMPORTANT TO ARKANSAS AND THE REGION. I ALSO WOULD LIKE TO TAKE A MOMENT TO SHARE WITH YOU SOME OF MY SPECIAL CONCERNS AND INTERESTS.

AS NATIONALLY REPORTED, WEST MEMPHIS, ARKANSAS SUFFERED THROUGH A DEVASTATING KILLER TORNADO AND TWO MAJOR FLOODS IN DECEMBER 1987 AND JANUARY 1988, CAUSING MILLIONS OF DOLLARS IN DAMAGES. THE RESPONSE OF THE CITIZENS OF WEST MEMPHIS WAS HEARTENING AND IMPRESSIVE, BUT THERE REMAINS MUCH WORK TO BE DONE. IN PARTICULAR, THE CITY IS IN NEED OF THE DEVELOPMENT AND IMPLEMENTATION OF A CORPS OF ENGINEERS-SPONSORED EMERGENCY FLOODWATER EVACUATION CONTINGENCY PLAN. AS ORIGINALLY PROPOSED, THE PLAN WOULD INCLUDE ISOLATING FLOOD PRONE AREAS FROM THE EXISTING DRAINAGE SYSTEM, LEVEE WORK, THE STRATEGIC PLACEMENT OF PERMANENT SUMP AREAS, AND THE USE OF EMERGENCY "PTO" PUMPS. AN EVALUATION OF THE IMPACT OF SUCH A FLOODWATER EVACUATION OPERATION ON THE AREA DRAINAGE IS ALSO NECESSARY.

THE CITY OF WEST MEMPHIS WILL ALSO BE GREATLY BENEFITED BY THE WEST MEMPHIS, ARKANSAS AND VICINITY PROJECT, WHICH IS A $22 MILLION, 8 TO 10 YEAR PROJECT WHICH WILL PROVIDE LONG-TERM SOLUTIONS TO THE FLOODING PROBLEM FACED ANNUALLY BY THIS CITY. HOWEVER, THE COST SHARE REQUIREMENT IS MORE THAN THIS SMALL CITY CAN PROVIDE. WEST MEMPHIS IS LOCATED IN CRITTENDEN COUNTY WHERE OVER 40% OF THE FAMILIES LIVE BELOW THE POVERTY LINE, AND WHERE THE PER CAPITA OF $8,430 IS 34% BELOW THE NATIONAL AVERAGE. THE $11 MILLION COST SHARE REQUIREMENT FOR A CITY WITH AN ANNUAL

BUDGET OF ONLY $8 MILLION IS CLEARLY ONEROUS, AND I REQUEST THE COMMITTEE TO REQUIRE THE ASSISTANT SECRETARY FOR CIVIL WORKS TO ADOPT A POLICY OF CASE BY CASE ADJUSTMENT AND THEREBY SUBSTANTIALLY REDUCE THE CITY'S COST SHARE AMOUNTS. THE 1986 WATER RESOURCES DEVELOPMENT ACT PROVIDED DISCRETION ON THE COST SHARE REQUIREMENT BASED ON THE ABILITY OF COMMUNITIES TO PAY, AND I URGE THAT THIS POLICY BE GENERALLY ADOPTED SO AS TO REMOVE THE DISPARITY BETWEEN POOR AND WEALTHY COMMUNITIES. WE MUST IN SOME EFFECTIVE WAY DEAL WITH THE COST SHARE ISSUE TO PROVIDE RELIEF TO POOR COMMUNITIES.

MR. CHAIRMAN, THE CREATION OF HARBOR FACILITIES, ESPECIALLY SLACKWATER HARBORS, IS TREMENDOUSLY IMPORTANT IN THE FURTHER DEVELOPMENT OF THE NAVIGATION CAPABILITIES IN ARKANSAS AND THE REGION. I HAVE STRONGLY SUPPORTED THE PROPOSED FACILITIES AT HELENA, YELLOW BEND, AND PINE BLUFF, AND I AM PLEASED TO REPORT THAT WORK ON THE FIRST TWO PROJECTS IS PROCEEDING. I INTEND TO CLOSELY MONITOR THE ACTIVITIES OF THE CORPS CONCERNING HELENA AND YELLOW BEND AND TO PURSUE A FUNDING REQUEST FOR PINE BLUFF. I SUPPORT THE BUDGET REQUEST FOR THE HELENA SLACKWATER HARBOR PROJECT AND I AM INTERESTED IN SEEING THE CORPS COMPLETE THE PRECONSTRUCTION ENGINEERING AND DESIGN IN AN EXPEDITIOUS MANNER.

I ALSO REQUEST THAT THE YELLOW BEND PROJECT BE FUNDED IN FY89 AT THE FULL CORPS CAPABILITY.

ALL OF THESE PROJECTS WILL SERVE THE NAVIGATION NEEDS OF A REGION THAT IS THE POOREST IN THE COUNTRY. THE CORPS SUPPORTS THESE PROJECTS AND LOCAL SPONSORS HAVE WORKED TIRELESSLY FOR MANY YEARS TO MAKE THESE PROJECTS A SUCCESS. I AM ESPECIALLY PLEASED THAT THE BUDGET INCLUDES $5.3 MILLION FOR THE HELENA SLACKWATER HARBOR PROJECT.

THE RED RIVER PROJECT CONTINUES TO SERVE A VITAL FUNCTION, AND THE RED RIVER COMMISSION WILL TESTIFY TODAY ON FUNDING FOR SEVERAL PORTIONS OF THIS PROJECT. I STRONGLY SUPPORT THESE REQUESTS, AND I URGE THE COMMITTEE TO ACT FAVORABLY. ONE OF THE CRITICAL FUNDING NEEDS IS $4.2 MILLION FOR THE RED RIVER EMERGENCY BANK PROTECTION PROGRAM. BANK CAVINGS CONTINUE TO BE A TREMENDOUS THREAT TO AGRICULTURE, NAVIGATION, HIGHWAYS, BRIDGES, AND FLOOD CONTROL, AND MUCH VALUABLE LAND HAS ALREADY BEEN IRREPARABLY LOST. IF THE NECESSARY WORK IS NOT CONTINUED, THE COST OF PERFORMING THIS WORK IN THE FUTURE WILL SKYROCKET. THIS MONEY WILL ALLOW CONTINUANCE OF NECESSARY BANK STABILIZATION

WORK, INCLUDING THE INITIATION OF CRITICAL WORK ON THE BROWN AND BEAR REALIGNMENTS AND THE SLAY BEND REVETMENT. I HAVE RECOMMENDED LANGUAGE THAT I WOULD LIKE TO SHARE WITH THE COMMITTEE AT A LATER DATE.

I SUPPORTED THE ADMINISTRATION'S INITIAL FUNDING DURING FY84 OF THE COMPREHENSIVE BASIN STUDY, RED RIVER BELOW DENISON DAM, WHICH INCLUDES THE COMPREHENSIVE STUDY OF THE FLOOD CONTROL, WATER SUPPLY, PORT DEVELOPMENT, RECREATIONAL, AND HYDRO-ELECTRIC POTENTIAL OF THE ENTIRE RED RIVER BASIN. I JOIN THE RED RIVER COMMISSION IN URGING THAT APPROVAL BE GIVEN AT THE FULL CORPS CAPABILITY FOR FY89 FOR CONTINUATION OF THE STUDY, INCLUDING THE INITIATION OF A STUDY ON THE FEASIBILITY OF NAVIGATION FROM SHREVEPORT, LOUISIANA TO INDEX, ARKANSAS, AND ALL POINTS IN BETWEEN.

ANOTHER PROJECT THAT I AM INTERESTED IN IS THE RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA TO INDEX, ARKANSAS, WHICH IS THE REASON FOR THE CREATION OF THE COMMISSION.. FUNDING FOR THIS COMPREHENSIVE BANK STABILIZATION PROJECT FOR PRECONSTRUCTION

PLANNING AND CONSTRUCTION IS REQUIRED IF THE THREAT TO VALUABLE FARMLAND IS TO BE ENDED. MILLIONS OF DOLLARS HAVE ALREADY BEEN PROVIDED BY THE STATE OF ARKANSAS AND LOCAL GOVERNMENTS AND THE RED RIVER COMMISSION IS CONTINUING ITS EFFORTS TO HAVE ALL NECESSARY NON-FEDERAL COST SHARE FUNDS IN HAND FOR THE START OF CONSTRUCTION. I STRONGLY SUPPORT THE REQUEST FOR $50,000 FOR THE CONTINUATION OF PRECONSTRUCTION PLANNING.

UNDER RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM, $250,000 IS CRITICALLY NEEDED FOR THE REPLACEMENT OF A COMPLETELY FAILED FLOOD GATE AND LEVEE IN MILLER COUNTY, ARKANSAS IN THE MCKINNEY BAYOU DRAINAGE DITCH. THIS GATE WAS CONSTRUCTED TO CONTROL BOTH HIGH FLOWS IN MCKINNEY BAYOU OR FLOODING CAUSED BY BACK-WATER FROM THE RED RIVER IN HIGH STAGES, AND ITS LOSS THREATENS OVER 30,000 ACRES OF PRIME FARMLAND WITH POTENTIAL FLOODING. I JOIN THE COMMISSION IN FURTHER URGING THAT THE SECRETARY OF THE ARMY BE DIRECTED TO INITIATE AND COMPLETE THE DESIGN OF A REPLACEMENT STRUCTURE IN FY89 SO THAT CONSTRUCTION CAN SOON BEGIN.

ALSO, $500,000 IS NEEDED TO IMPLEMENT A COMPLETED CORPS STUDY ON THE RESHAPING OF LEVEES ALONG THE RED RIVER IN ARKANSAS. THIS

WORK WILL ALLOW FOR THE IMPROVEMENT IN THE SYSTEM AND FOR MUCH REDUCED MAINTENANCE COSTS. AND $350,000 IS NEEDED TO FUND RESUMED PRECONSTRUCTION PLANNING ON THE RED RIVER BANK STABILIZATION PROJECT FROM INDEX, ARKANSAS TO DENISON DAM, TEXAS.

MR. CHAIRMAN, SHOULD THE CORPS OF ENGINEERS ONCE AGAIN, AND FOR THE THIRD STRAIGHT YEAR, SEEK TO CLOSE OUT FUTURE CONSTRUCTION AUTHORITY ON THE MCCLELLAN-KERR ARKANSAS NAVIGATION SYSTEM, I WILL AGAIN VIGOROUSLY OPPOSE IT BECAUSE MANY PROBLEMS IDENTIFIED BY THE CORPS HAVE NOT YET BEEN SATISFACTORILY RESOLVED. THE ARKANSAS RIVER SYSTEM HAS BEEN A TREMENDOUS BOON TO THE ECONOMIC DEVELOPMENT EFFORTS OF ARKANSAS, AND I AM AFRAID THAT IRREPARABLE HARM CAN RESULT IF THIS PROJECT IS DEAUTHORIZED.

I JOIN WITH THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE AND THE ARKANSAS BASIN ASSOCIATION IN URGING THE CONTINUATION OF CONSTRUCTION AUTHORITY. PROJECTS WHICH ARE LEFT TO BE RESOLVED, AND WHICH DESERVE FURTHER COMMITTEE ATTENTION, ARE A PROPOSED STRUCTURE AT THE MOUTH OF THE WHITE TO ALLEVIATE LOW-WATER PROBLEMS, REMOVAL OF HIGH ROCK IN THE POOL FORMED BY MURRAY LOCK

AND DAM, THE CONSTRUCTION START OF THE EXTENSION OF THE ARKANSAS-WHITE RIVER CUT-OFF STRUCTURE, REPAIRS TO DAM 2, THE NEED TO PURCHASE MORE EASEMENT LANDS, AND THE ARKANSAS RIVER BASIN STUDY. THE ARKANSAS RIVER BASIN STUDY IS URGENTLY NEEDED BECAUSE SERIOUS PROBLEMS HAVE ARISEN DUE TO CONFLICTING NEEDS OF DIFFERENT BENEFICIARIES OF THE RIVER'S RESOURCES.

OTHER REQUESTS NEEDING ATTENTION ARE $500,000 FOR THE INSTALLATION OF TOW-HAULAGE EQUIPMENT AT LOCK AND DAM 3 THROUGH DAVID D. TERRY LOCK AND DAM, AND OPERATIONAL AND MAINTENANCE FUNDS FOR THE FULL-DEPTH EXCAVATION OF THE ARKANSAS-WHITE CANAL. I ALSO JOIN THE BASIN GROUPS IN EXPRESSING MY SUPPORT FOR THE ADMINISTRATION'S BUDGET REQUEST FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF THE MCCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM.

MR. CHAIRMAN, THESE ARE BUT A FEW OF THE CONCERNS THAT I HAVE INVOLVING PROJECTS AFFECTING ARKANSAS AND THE REGION, AND I WILL BE IN FURTHER CONTACT WITH YOU AND OTHER MEMBERS OF THE COMMITTEE TO SHARE OTHER CONCERNS. I BELIEVE THAT THE PRUDENT AND REASONED

DEVELOPMENT OF OUR WATER RESOURCES IS AN IMPORTANT NATIONAL PURPOSE, AND I APPRECIATE THE OPPORTUNITY TO SHARE MY THOUGHTS ON SOME OF THE PROJECTS WHICH HELP TO FURTHER THIS IMPORTANT PURPOSE. I HAVE ALWAYS APPRECIATED THE CONSIDERATION THE CHAIRMAN HAS GIVEN ME ON MY REQUESTS, AND I LOOK FORWARD TO WORKING WITH YOU AND OTHER MEMBERS OF THE COMMITTEE.

STATEMENT OF HON. WILLIAM ARMSTRONG, U.S. SENATOR FROM COLORADO

Senator JOHNSTON. Senator Armstrong.

Senator ARMSTRONG. Mr. Chairman, it is an unexpected pleasure for Senator Cochran and me to be here on the occasion of your campaign for the Democratic Leader's position. As I was coming over here it never crossed my mind that we would be in on this bit of history, let alone that at the very same time we would have a chance to see you get those watermelon seeds. I don't know what the life cycle is of watermelons, but I would guess that at the right moment you will probably share the product of these seeds with your colleagues in the Senate and we look forward to that.

I just wanted to come by for a moment to introduce my friend, Charles Tommy Thompson, of Pueblo, Colo. I have a brief statement which I would like to insert into the record of this proceeding, but let me just say that my dear friend Tommy Thompson has probably done more to speak for and to advance the cause of the development and wise use and conservation of water in our state and throughout the western states than anybody I know.

He is the general manager of the Southeastern Colorado Water Conservancy District, which is based in Pueblo. Over the couple decades that I know about his involvement in water, he has had many outstanding accomplishments, not the least of which was his recent feat of overturning 100 years of irrigation practice by getting a storage decree which allowed winter water to be stored and made available for subsequent use instead of just letting it run across the fields.

There are a lot of things I can say about Tommy, but let me just say, Mr. Chairman and members of the committee, that I hope that you will give great weight to the testimony which he will present. He speaks not only on behalf of the Southeastern Colorado Water Conservancy District of which he is the general manager, he is also the newly elected Chairman of the five-state Arkansas River Basin Interstate Committee whose representatives are here today. He is also the chairman of the seven-state Colorado River Water Users Association.

All of which, Mr. Chairman, is just to say that whatever he tells you, you can count on. He enjoys widespread support throughout not only my state, but over the entire region.

Senator JOHNSTON. Thank you very much, Senator Armstrong.

Finally, I recognize our good friend and compadre from Mississippi, Senator Cochran, who will introduce our first panel.

STATEMENT OF HON. THAD COCHRAN, U.S. SENATOR FROM MISSISSIPPI

Senator COCHRAN. Thank you very much, Mr. Chairman.

It is really a pleasure for me to look out and see so many friends and neighbors who are here today to present testimony in support of our needs in the Mississippi River Valley. The lower Mississippi Valley, as John Breaux has pointed out, and Dale Bumpers and David Pryor and you, Mr. Chairman, know so well, is an area that is in desperate need of continued support in the efforts to deal with the ever-increasing problems of flooding and the damage that brings home to the people who live and work in the lower Mississippi Valley.

It seems that we are reminded too often and too frequently of the price we pay for not moving forward any quicker in completing the long authorized and overdue construction projects that we need in the lower Mississippi River Valley.

I am glad to present Mark Simmons, who is here today as chairman of our executive committee of the Lower Mississippi River Valley Flood Control Association. There are other witnesses who will present testimony, but I turn it over to Mark to present them to you and introduce them to you.

Let me just say in conclusion, Mr. Chairman, how much I personally appreciate everybody being here in support of this important project. Just to give the committee an indication of who we have here, would everybody who is here in support of the Lower Mississippi River Flood Control Association please stand. [Large group standing.]

Thank you very much, we appreciate your being here.

Mr. Chairman, I don't think I need to say much else, except I support this request.

Senator JOHNSTON. Surprise, surprise. [Laughter.]

Thank you very much Senator Cochran.

LOWER MISSISSIPPI VALLEY FLOOD CONTROL PROJECTS

STATEMENT OF T.M. SIMMONS, CHAIRMAN, EXECUTIVE COMMITTEE, LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION; AND PRESIDENT, YAZOO-MISSISSIPPI DELTA LEVEE BOARD

Senator JOHNSTON. Now our first panel, the Lower Mississippi Valley Flood Control Association, has 20 minutes, and Mark Simmons, the chairman of the executive committee, will preside for this group.

Mr. Simmons.

Mr. SIMMONS. Mr. Chairman aand distinguished members of the committee, my name is Mark Simmons. I am the president of the Yazoo-

Mississippi Delta Levee District of Clarksdale, Miss. I am also chairman of the executive committee of the Lower Mississippi Valley Flood Control Association and I appear here as a spokesman for that association in support of the Mississippi River and tributaries project, which was established by the Flood Control Act of 1928.

Mr. Chairman, I assure you we will be as brief as possible. I have submitted a more detailed statement that I request be made a part of the record.

Senator JOHNSTON. Without objection.

Mr. SIMMONS. Most, if not all, of you are familiar with our association and I describe the organization and objectives in my written statement, so I will not repeat that.

Last year, we appeared before this subcommittee and, as we had done for over 50 years, our speakers discussed with you our funding problems with certain aspects of the flood control and navigation work that makes up the complex and vital Mississippi River and tributaries project. We requested additional funding for only three items where funds had not been budgeted. As the Congress, with the guidance and advice of this subcommittee has done for over 50 years, funds were appropriated and included in Public Law 100–202 for the items that we had requested.

Unfortunately, we are now faced with situations that are different than those of the past and the proper actions taken by the Congress to provide funds leaves us no closer to the realization of the completion of the Mississippi River and Tributaries Project, and this nation is no closer to reaping the benefits that would accrue from the construction of the items that you appropriated funds for than we were a year ago.

The problems we now face concern the inability to pay for the new and additional cost-sharing requirement plus the reluctance or refusal on the part of the executive department to construct the work that the Congress has authorized and funded.

The executive committee of the Lower Mississippi Valley Flood Control Association has closely examined the Mississippi River and tributaries project budget request of $334,297,000 and it finds that this amount, if properly and efficiently applied, will be sufficient for the orderly advancement of the budgeted items.

With that as background, and with our firm and continued belief that all decisions concerning water resources development should be made in the open forum of the Congress, we are deviating from our usual format this year and will present witnesses that will clearly show this subcommittee what we are facing in the lower Mississippi Valley. We are doing this because we are firmly and fully convinced that only members of this committee with the assistance from others in the Congress can save the vitally needed and too long delayed completion of the Mississippi River and tributaries project.

We know that water resources projects which have proven merit are investments which have already or will return to the taxpayer a generous return. We believe that not constructing such a proven project

would contribute to the economic problems of our country, not help solve them.

We totally disagree with the Corps of Engineers spokesman who termed projects "winners," only if they have financially supportable local sponsors. We hope that our speakers can convince this body that the projects we are here to support are winners, even though we lack the ability to pay for new and additional cost sharing.

Mr. Chairman, with your permission, I would like to introduce our first witness, Mr. Keith Ingram, the newly elected mayor of West Memphis, Ark.

[The statement follows:]

STATEMENT OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

Mr. Chairman and distinguished members of the Committee, my name is Mark Simmons. I am the President of the Yazoo-Mississippi Delta Levee District of Clarksdale, Mississippi. I am also the Chairman of the Executive Committee of the Lower Mississippi Valley Flood Control Association and I appear here as spokesman for that Association in support of the Mississippi River and Tributaries Project which was established by the Flood Control Act of 1928. Mr. Chairman, I assure you we will be as brief as possible.

As most of you know, the Lower Mississippi Valley Flood Control Association is an agency composed of Levee Boards, Drainage Districts, Port Commissions, Municipalities and other local units of government of the seven states bordering on the lower Mississippi River, having responsibility at the local level for flood protection, drainage, navigation and harbor development, in the States of Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana, extending from Cape Girardeau, Missouri to the Gulf of Mexico. Our Association has, for well over fifty years, worked closely with the Congress, the Corps of Engineers and other governmental agencies to promote adequate flood protection along the Lower Mississippi River, to provide adequate run-off and drainage of flood and surface waters, to develop harbor facilities, and to encourage greater use of the river as an artery of transportation. We provide the means for all the people of our great Valley to speak and act jointly on all these problems and concerns.

Last year we appeared before this Subcommittee and as we had done for over fifty years our speakers discussed with you our funding problems with certain aspects of the flood control and navigation work that makes up the complex and vital Mississippi River and Tributaries Project. We requested additional funding for only three items where funds had not been budgeted. We strongly feel that those omissions would prevent the continuation and completion of the overall project at a reasonable rate.

As the Congress, with the guidance and advice of this Subcommittee, had done for over fifty years, funds were appropriated and included in Public Law 100-202 for the items as we had requested.

Unfortunately we are now faced with situations that are different from those of the past and the proper actions taken by the Congress to provide funds leaves us no closer to the realization of the completion of the Mississippi River and Tributaries Project and this nation is no closer to reaping the benefits that would accrue from the construction of the items that you appropriated funds for than we were a year ago.

The problems we now face concern the inability to pay for the new and additional cost-sharing requirements that are a part of the Water Resources Development Act of 1986 plus the reluctance or refusal on the part of the Executive Department to construct the work that the Congress has authorized and funded.

The Executive Committee of the Lower Mississippi Valley Flood Control Association has closely examined the Mississippi River and Tributaries Project Budget request of $334,297,000 and it finds that this amount, if properly and efficiently applied, will be sufficient for the orderly advancement of the budgeted items.

With that as background and with our firm and continued belief that all decisions concerning water resources development should be

made in the open forum of the Congress we are deviating from our usual format this year and will present witnesses that will clearly show this Subcommittee what we are facing in the Lower Mississippi Valley.

We are doing this because we are firmly and fully convinced that only members of this Committee, with the assistance from others in the Congress, can save the vitally needed and too-long delayed completion of the Mississippi River and Tributaries Project.

We know that water resources projects which have proven merit are investments which have already, or will, return to the taxpayers a generous return. We believe that not constructing such proven projects will contribute to the economic problems of our country--not help solve them. We totally disagree with Corps of Engineers' spokesmen who term projects winners only if they have and I quote, "financially supportable local sponsors".

We hope that our speakers can convince this body that the projects we are here to support are winners even though we lack the ability to pay for new and additional cost-sharing.

Mr. Chairman, with your permission, I would like to introduce our first witness, Mr. Keith Ingram, the duly elected Mayor of West Memphis, Arkansas.

WEST MEMPHIS, ARK., FLOOD CONTROL PROJECT

STATEMENT OF KEITH INGRAM, MAYOR, WEST MEMPHIS, ARK.

Mayor INGRAM. Mr. Chairman and distinguished members, my name is Keith Ingram. I am the mayor of West Memphis, Ark., a community of approximately 28,000 people located on the Mississippi River in Crittenden County.

I appreciate this opportunity to appear here today and speak for the people of West Memphis with the hope that this subcommittee may use its influence to help us solve a very serious and life-threatening problem caused by the deficiencies in our drainage and flood control systems.

We, the officials of West Memphis, have sought relief from all appropriate sources and agencies, but have found no solutions. Instead, our community dreads the next heavy rainfall, wondering if our homes will be flooded again. That is an empty and powerless feeling, one that no American citizen should have to endure.

So, now we turn to you. Please listen to my words today. I bring you not anger, not rhetoric, not artificial drama, nor emotional stories of disaster. Gentlemen, I bring you only the facts. Please hear our story.

Between 1975 and 1986, the city of West Memphis suffered five significantly damaging floods, average annual damages exceeded $3 million a year, as well as personal loss and suffering that cannot be measured. During the past 5 years, many homes have been flooded on as many as five different occasions.

Last December we suffered another disastrous flood that damaged almost 1,000 homes and forced 1,200 low-income individuals to leave their homes. The Red Cross provided almost 20,000 meals and tem-

porary shelters to house over 640 families. Worse than the damage to homes, we also suffered three fatalities. No money value can be placed on the loss of those lives.

Let me briefly explain our problem and why I come to you today asking for your intercession. The city of West Memphis is protected against major flooding from the Mississippi River by the mainline levee system. These levees are absolutely necessary in order to protect West Memphis and eastern Arkansas from the waters that drain 41 percent of the nation. These waters come from as far west as Montana and as far east as New York. Although we are thankful for the levees and the flood waters they contain, they create a problem that we alone cannot solve. The levees which protect our city against flood waters from almost half the nation, block the natural drainage of our own city's flood water.

Congress adopted a resolution in May 1975 directing the Corps of Engineers to study the long-standing flood problems in West Memphis, Ark. In 1986, Congress authorized construction of a Corps recommended project which calls for improvement of almost 24 miles of channels at a cost of about $24 million. That authorization, however, contained new cost-sharing requirements. These requirements stated that some nonfederal sponsor would be required to provide approximately $12 million as their part of the cost-share, including $1.5 million in cash.

We have also been told that another possible solution to this problem is a system to pump, during and following heavy rains, our surface water up and over the levee. I need not tell you how long that would take to study, design, engineer, and build. It also would cost many millions of dollars to implement.

LOCAL ABILITY TO PAY

Now comes our dilemma. The Corps of Engineers is operating under the unrealistic assumption that even the poorest communities and states have the ability to pay at least 25 percent of the cost of an economically justified flood control project. Mr. Chairman, our community is not the poorest in the nation, but I can assure you we cannot pay for 25 percent, 5 percent, or any percent of the cost of project authorized for flood control for West Memphis.

We cannot afford even to cost-share on a proposed $300,000 study by the Corps for preconstruction planning for the West Memphis project. The District Engineer in Memphis is looking for some way to make the project more affordable but, in all honesty, I must tell this committee that even if he reduces the scope of the project by one-half, we still will be unable to pay even 5 percent of that. Such a reduction would also cut the benefits, leaving us with a program that could not be economically justified.

Our entire city's annual budget is about $8 million. But, we have been told that no work on these drainage problems can be done unless our city pays millions of dollars. The Secretary of the Army has the

power to waive this requirement, but he is not acting in our favor. We do not know what to do. The only way our city could make such a payment is to discontinue all city services—fire, police, sanitation, cease our roadwork, close our libraries. Literally do without everything for years. That is an impossibility, but facing continued disaster from flooding is no viable choice either.

Let me tell you what the Federal Emergency Management Agency had to say about West Memphis' ability to pay for this cost sharing, and I quote from their January 27, 1988, Interagency Hazard Litigation Report:

> Due to the lower per capita income level in the area, and as a result of the effects of the flood and tornadoes on a large percentage of the population, the capability of the local officials to generate additional local revenues for matching funds required under Public Law 99–662 has been eliminated. For example, 80 percent of the disaster victims have not been able to qualify for Small Business Administration loans.

That very direct and official opinion from FEMA, given not more than a few months ago, indeed states the truth. West Memphis is not looking for something we don't deserve. Our city must have this flooding prevented. I know that Congress, in its wisdom, placed a section in Public Law 99–662 that states that any cost-sharing agreement for flood control shall be subject to the ability of the nonfederal interest to pay.

I have also read from the record several passages that strongly indicate to me that Congress intended that no beneficial project should be rejected simply because nonfederal interest lacked resources to finance the cost sharing.

Mr. Chairman, I would like to request that this committee appropriate funds for the West Memphis flood control project and exempt this work from any additional cost-sharing. I also request that the Congress take the necessary steps to assure that the ability to pay section in Public Law 99–662 be administered in the realistic manner that I am certain Congress intended.

I thank you for allowing me this opportunity and I deeply appreciate your kind attention.

Mr. Chairman, with your permission, I would like to call on our next witness, my good friend and neighbor, the mayor of Helena, Ark., Sammy Brocato.

STATEMENT OF SAMMY BROCATO, MAYOR, HELENA, ARK.

Mayor BROCATO. Thank you.

Mr. Chairman and distinguished members of the committee, I am Sammy Brocato, the mayor of Helena, Ark., a community of approximately 10,000 people located on the Mississippi River in Phillips County. I appreciate the opportunity to appear here today and speak for the people of Helena, West Helena, and Phillips County, concerning the Helena Harbor project.

Before I discuss the Helena Harbor, let me say that we also have authorized a flood control project similar to the one in West Memphis, and we, too, are faced with new and additional cost-sharing requirements that we cannot and do not have the ability to pay for.

I would like to repeat Mayor Ingram's request and ask that the Congress take whatever steps you deem proper to assure the ability to pay for flood control projects being administered in a realistic manner.

HELENA HARBOR, ARK.

Let me discuss very briefly the Helena Harbor project. The Water Resource Development Act of 1986 authorized the Secretary of the Army to construct a harbor at Helena. The authorization included certain requirements of local interests. The local citizens in the State of Arkansas have taken the necessary steps to meet the requirements.

Since our state is next to the poorest in the nation and Phillips County's per capita income is about one-half of the U.S. average, it requires a novel approach for us to raise the local cost-share. For the sake of time, I will not go into detail, but suffice it to say that without the use of state employees' and teachers' retirement funds, we would have been unable to meet our funding requirements.

Last year, during this testimony, the association requested funds be appropriated and action be taken by the Congress to ensure the construction of the Helena Harbor project. We are most grateful that the Congress did appropriate over $1 million.

Now comes our problem. We read that the President has called this wasteful spending.

Mr. Chairman, our area has an unemployment rate of about 20 percent, well above the national average. We know from experience and from the results of both federal and nonfederal studies that a port in Helena would generate jobs in the thousands. Our people have met their requirements. We need Federal dollars and the Federal expertise to construct the Harbor and bring to our area these vitally needed jobs.

This is not wasteful spending, but is, in fact, an investment. This harbor will create jobs at the grassroot level and keep people from leaving rural and small-town America.

Mr. Chairman, we request that this committee appropriate the $5.3 million contained in the fiscal year 1989 budget and direct the executive department to initiate the construction of this navigation channel.

I thank you for the opportunity to appear here today.

At this time, I would like to introduce to you my friend, Mr. John Allen Darnell, from Mississippi.

YAZOO BACKWATER PROJECT

STATEMENT OF JOHN ALLEN DARNELL, FARMER, GLEN ALLAN, MISS.

Senator JOHNSTON. Mr. Darnell, let me just say we are getting a little bit behind, so if we can keep the pace going, you all's 20 minutes is supposed to expire in 3 minutes. I don't want to gavel you down because I know you have an important message, but I do want to point out to all our witnesses our time constraints.

Mr. DARNELL. Thank you, Mr. Chairman and members of this committee. I am John Allen Darnell from Issaquena County, Miss., a

farmer who has served my county as a member of the board of supervisors for 8 years and sheriff for 12 years.

I am a life-long resident of Issaquena County and have seen the area known as the Backwater area before it was subjected to the devastation of man-made improvements and after-effects to this area because of these man-made improvements.

Issaquena County lies at the lower end of the drainage basin of Yazoo and Big Sunflower Rivers and Steele Bayou and, therefore, has been subjected to all of the upstream channel improvements both in the Yazoo Basin and the mainstem of the Mississippi River.

Prior to the closures on the west bank levee of the Mississippi, Issaquena County enjoyed the same relative freedom from floods as did any other area in the Lower Mississippi River Basin. But, after these improvements were made, without adequate protection for the east bank, the Yazoo Backwater area was created. The resultant decline in this area was tragic. It has suffered repeated damaging losses because of backwater flooding resulting in a great reduction in population and this decline continues to this date.

This project was operated and authorized by the federal government in 1941, which included the construction of levees, flood gates, and pump facilities, with the promise that when the other flood control improvements were completed, this area would receive its justly deserved protection as has been afforded other regions in the lower Mississippi River Valley.

Portions of this project have been constructed, levees and flood gates, but no pumps, which means that the affected area must accommodate and store drainages from upstream channel improvements until they can be discharged by gravity flow. This results in a manmade impoundment and has intensified the manmade backwater flooding.

Now our time has come and we need the pumps. By some unfair political maneuvering, the backwater pumping plant has been cited as a separable item and is subject to cost-sharing applications that can in no way be borne by the people of the affected area. We can't afford this cost-share. We feel offended and aggrieved that this promise made to us has been reneged on by the federal government and we plead the understanding of this committee to see that the funds be continued to be appropriated for the construction of this vital work and for clarifying language to be inserted into the law that would dismiss the threat held over our head by the cost-sharing application in the 1986 omnibus bill and allow us to live in relative peace that will only be possible with the fulfillment of the promises made to this area in the Flood Control Act of 1941.

Thank you, sir, and I would like to introduce my next witness here, Mr. Curtis Patterson from Louisiana.

STATEMENT OF CURTIS PATTERSON, DEPUTY CHIEF ENGINEER, LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

Senator JOHNSTON. Mr. Patterson.

Mr. PATTERSON. Mr. Chairman, good afternoon.

Members of the subcommittee, I am Curtis Patterson, assistant for water resources, Louisiana Department of Transportation and Development; and also I am secretary-treasurer of the Association of Levee Boards in Louisiana.

My comments today summarize our written brief on behalf of the state of Louisiana and the Association of Levee Boards in Louisiana and are generally in support of the budget allowance proposed by the administration.

LOUISIANA ESTUARINE ENHANCEMENT EFFECTS

I would like to bring several items to your attention concerning some of the authorized projects in Louisiana. Our coastal marshes are fast disappearing, our fisheries industry is deteriorating, and we need to do all that we can, as quickly as we can, to stop these losses.

The Corps of Engineers just published a brochure entitled, "Crises on Louisiana's Coast—America's Loss," and it is America's loss, not just Louisiana's. Louisiana's marshes produce each year some 30 percent of the nation's fisheries, worth $680 million; and 40 percent of the nation's wild fur and hide, worth $17 million. More than 66 percent of the waterfowl use the Mississippi flyway to find winter haven in the Louisiana wetlands, another $58 million a year interest. Twenty-two percent of the nation's oil and gas production, worth $27.1 billion in 1985, came from Louisiana's wetlands and offshore waters.

The marshes also act as a natural buffer during hurricanes, protecting the nation's investment in the navigation system and ports. I mentioned this in support for the finding that protecting and preserving Louisiana's coastal area will produce national benefits.

Congress, in the Water Resources Development Act of 1986 (Public Law 99–662), states that fish and wildlife enhancement measures carried out as a part of the project for the Atchafalaya floodway system, Louisiana, authorized by Public Law 99–88, and the project for the Mississippi delta region, Louisiana, authorized by the Flood Control Act of 1965, shall be considered to provide benefits that are national for purposes of this section.

But, in order to get the first of these projects, the Caernarvon freshwater diversion project, authorized for construction by the Congress in the Water Resources Act of 1986, Louisiana had to come up with 25 percent of the funds even though the state is in very poor financial shape.

So, you can see we are committed to saving our coastline. We urge the Congress to be as committed and honor its full obligation when funding these projects that have national benefits.

The second freshwater diversion project—the Davis Pond—is now in preconstruction design and engineering, and we urge Congress to fund

it fully. The Caernarvon and Davis Pond freshwater diversion projects are mitigation for fish and wildlife losses and flood control projects, and it has the subtitle of "Mississippi Delta Region Project, Louisiana."

Another freshwater diversion project, the Mississippi and Louisiana Estuarine Areas Project, is included in the Corps' budget request for fiscal year 1989 for preconstruction engineering and design. It also has been approved for funding in Senate bill 2100 now moving through Congress. We are pleased that it has been included.

We support the funding requests for planning as well as the authorization in Senate bill 2100. We need to get moving on all of these coastal projects before it is too late and we request your consideration for appropriation of the funds on all the coastal measures for Louisiana listed in the budget.

The state supports, in cooperation with the affected levee boards in Louisiana, the budget proposed for those projects under the "Mississippi River and tributaries" appropriation, such as the Atchafalaya basin, the Atchafalaya basin floodway system, the Tensas basin, the Mississippi River channel improvement and levees project.

Another project of great concern to the metropolitan area of New Orleans is the flood protection work needed on the west bank of the Mississippi River. We are in support of the budget request for funds to continue surveys on this project.

As a result of the extensive flooding in the West, we go to Harvey Canal area by Hurricane Juan of 1985, the West Jefferson Levee District, along with the state, has spent large sums of money to make investigations and surveys to determine right-of-way acquisition needs in an attempt to try to accelerate this project.

The state presently has some funds available to help start construction, but we can't hold these funds much longer. We need the budget request for surveys for the west bank of the Mississippi River project in the vicinity of New Orleans so the Corps can proceed with their work of determining just what protective works are needed and exactly where those works would be located.

It is not economically advisable for the levee board to proceed with work ahead of time, even though they are essentially ready to proceed, as the Corps' planning and design may determine that any prior work by the levee board to be unacceptable. We need those budgeted funds approved and we need the Corps' planning accelerated.

With the permission of the committee, I have submitted for the record a written statement on appropriations for navigation, hurricane protection, and other water resource projects in Louisiana. This statement supports the President's recommendation for these projects.

We will appreciate your consideration of these critical program needs, and we assure you that the state of Louisiana and the various affected levee boards will honor their agreements. Thank you so much for allowing us this opportunity to discuss them with you today.

[The statement follows:]

STATEMENT OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT OFFICE OF PUBLIC WORKS

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana in the planning and orderly development of water resources. This statement is presented in behalf of the State of Louisiana and contains endorsements and recommendations for Fiscal Year 1989 appropriations for Louisiana projects in the Mississippi River and Tributaries Project.

MISSISSIPPI RIVER AND TRIBUTARIES
SUMMARY OF RECOMMENDED APPROPRIATIONS

LOUISIANA PROJECTS	BUDGET ALLOWANCE	AND	LOUISIANA REQUEST
Construction			
Atchafalaya Basin		$31,000,000	
Atchafalaya Basin, Floodway System		11,700,000	
Channel Improvements		94,900,000	
Mississippi Delta Region Project			
Caernarvon and Davis Pond		7,450,000	
Mississippi River Levees	$22,700,000		$23,400,000
Tensas Basin, AR & LA		6,600,000	
Red River Backwater Area		(5,758,000)	
Tensas-Cocodrie Pumping Plant		(842,000)	
Authorized Studies			
Atchafalaya Basin (Water & Land Resources)		54,000	
Boeuf-Tensas Basin		575,000	
Planning			
Mississippi & Louisiana Estuarine Areas		$ 715,000	
Operation and Maintenance			
Atchafalaya Basin		6,893,000	
Baton Rouge Harbor - Devil Swamp, La.		300,000	
Bayou Cocodrie & Tributaries		118,000	
Bonnet Carre Spillway		501,000	
Channel Improvement		60,082,000	
Lower Red River - South Bank Levees		69,000	
Mississippi River Levees		4,649,000	
Old River Control Structure		4,741,000	
Red River Backwater Area		2,583,000	
Tensas Basin, Boeuf & Tensas Rivers		2,254,000	

NOTE:

The projects listed above are only those in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Project and in these areas, we endorse the recommendations of the Lower Mississippi Valley Flood Control Association.

ATCHAFALAYA BASIN
(Budget: $31,000,000) (Request: $31,000,000)

This project is a Main Stem component of the flood control plan for the Mississippi River and Tributaries Project. The Mississippi River can safely carry only one-half of the project flood, or 1,500,000 cubic feet per second, below Old River; the other 1,500,000 cubic feet per second must be discharged through the Atchafalaya Basin. The levees which must confine this flow to the basin are now deficient because they have settled below original design grade due to consolidation of the underlying soils, and the design has been revised upward. This places the lives and welfare of 650,000 people and their property and improvements in 13 parishes in the immediate vicinity of the Atchafalaya Floodway in jeopardy each flood year. The tax assessment records indicate the value of potential flood losses to be approximately $8 billion, not including public improvements. Over the past half century, we have supported the Mississippi River and Tributaries Project and have agreed that construction of flood protection works should start upstream and progress downstream. As a result, the Mississippi River and Tributaries Project is now more than 90% complete in sites upstream from Louisiana while the levees in the Atchafalaya Basin can contain only approximately 73% of the project flood. Work on this project has been underway since 1928 and isn't scheduled for completion until the year 2000. We request that Congress provide $31,000,000 for this project for Fiscal Year 1989.

CHANNEL IMPROVEMENTS
(Budget: $94,900,000) (Request: $94,900,000)

Channel improvements and stabilization provide protection of levees and the many improvements behind them, as well as preventing unsatisfactory alignment where the river's bank is unstable. This project is also a Main Stem component of the flood control improvement program for the Mississippi River and the benefits are the same as for the other main stem components. The Mississippi River and Tributaries Project above Louisiana is about 90 percent complete but to a much lesser extent within Louisiana. Because of the improvements upstream, increased flows area major problem in Louisiana where the project is lagging. The funds we are requesting will provide for the dredging and revetment work necessary to accommodate these increased flows.

MISSISSIPPI DELTA REGION PROJECT, CAERNARVON AND DAVIS POND
(Budget: $7,450,000) (Request: $7,450,000)

The Caernarvon Freshwater Diversion Project has been authorized for construction by the Congress in the Water Resources Development Act of 1986 and by the President when he signed the legislation. In that Act the benefits for the project were to be considered national benefits, thereby authorizing this project to be funded totally with federal dollars. In reality, the State of Louisiana has "voluntarily" offered to cost share 25% in order to get the project under construction. Davis Pond Freshwater Diversion Project is now in preconstruction, engineering and design. The State of Louisiana is committed to these projects, but would urge Congress

and the Administration to be as committed and honor their obligation to funding Davis Pond 100 percent since the benefits accrued are national benefits.

It is requested that $7,450,000 for fiscal year 1989 be provided for construction of these very beneficial projects.

MISSISSIPPI RIVER LEVEES
(Budget: $22,700,000) (Request: $23,400,000)

Construction of mainline Mississippi River Levees in Louisiana also lags behind the construction in the upper valley. The Atchafalaya Basin Levee Board has its funds ready for the Port Allen levee enlargement and we request that this levee enlargement be added to the Corps' budget request for Fiscal Year 1989. The same reasons that apply to our request for funds for channel improvements on the Mississippi River and improvements in the Atchafalaya Basin, apply equally well to our request for additional funds for the Mississippi River levees. We are requesting that an additional $700,000 be added to the appropriation totaling $23,400,000.

MISSISSIPPI & LOUISIANA ESTUARINE AREAS
(Budget: $715,000) (Request: $715,000)

This project is scheduled for final plans and specifications. The State of Louisiana supports this project and is pleased that it has been included for authorization for construction in Senate bill 2100 now moving through Congress. We request that the $715,000 budgeted for Fiscal Year 1989 be appropriated by Congress.

LOCAL CONTRIBUTIONS FOR FLOOD CONTROL IMPROVEMENTS

Historically, Louisiana has always done its part in cooperation with the Federal agencies concerned with flood control. The Louisiana State Board of Engineers, the forerunner of the Office of Public Works, was created in 1879, the same year as the Mississippi River Commission, to coordinate the planning and construction of the required flood control facilities to protect the State. Since that time, local expenditures for flood control have exceeded $730,000,000. This amount adjusted to 1979 dollars represents expenditures in excess of $5.3 billion. Nearly one-half of the potential flooded area of the Lower Mississippi River Valley lies in Louisiana. Local expenditures for flood control have increased with the growth of the valley. This record not only meets, but exceeds any National Water Policy local participation requirements ever put into practice.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

At this time then, we will turn our presentations for conclusion back to Mr. Simmons.

Mr. SIMMONS. Mr. Chairman that concludes our list of witnesses.

I wish to express the sincere appreciation for of entire group for your kind attention, and we thank you in advance for the consideration.

Due to the time schedule, I would like to request that the rest of my statement be made a part of the record.

Senator JOHNSTON. Thank you, all the members of the panel, for an excellent presentation.

I might say, Mr. Patterson, that we are well aware of the projects you have mentioned. This question of marsh reclamation is very, very difficult and is likely to be a very expensive effort. There are not only the projects on-going which you mentioned, but larger studies, coordinated studies, of course, under the Corps, in which you are engaged, which I hope will give us a larger matrix on which we can have an overall solution.

Maybe it is not possible to have an overall solution, because each area of the marsh is different, subject to the different stresses and will take a different solution, but that has a very high priority with us.

COST SHARING AND ABILITY TO PAY

With respect to cost sharing, let me say to you, Mr. Ingram and Mr. Darnell, and others who have spoken about it and will speak about it in the future. A few years ago I very, very strongly opposed that cost sharing, because I knew it was going to lead to the very problems it is leading to right now.

We spoke against it. For a while, we were threatening filibusters. We were doing everything we could on the question of cost sharing. Then, when it became inevitable, we worked on it to minimize its impact as best we could. We are now bound by that law and the committee must operate under it.

The Corps of Engineers now has out a preliminary rulemaking which indicates that the requirement for 25- to 30-percent cost sharing can be—the law states that they may take into consideration ability to pay, and their preliminary rules say that they may, in certain instances and subject to certain rules and regulations, reduce that to, I believe, 10 percent, but they will require some cost sharing in all cases. So, the problem with cost sharing really relegates itself to the Corps, because the Congress has acted and we are bound by that.

We will, I think it is appropriate, take your testimony and that of the others who complain about the cost sharing—I am very well aware of the situation in West Memphis. I know you don't have any extra money that would allow you to participate in cost sharing a project. We will take your testimony and send it to the Corps and ask them for a response and bring this up to them.

But it is not the kind of thing that we can say, "We hear your plea and, therefore, we will respond," because, we are bound by that law. Even though we fought it and didn't like it, we are bound by it and have to operate within it.

Thank you very much, gentlemen. We appreciate your testimony.

Senator COCHRAN. Mr. Chairman?

Senator JOHNSTON. Senator Cochran.

Senator COCHRAN. I would like to have an opportunity to at least respond. Let me say that because we have such a large number of witnesses who have come this distance to show their support, I think the subcommittee ought to recognize that and the importance that it illustrates these projects have in their communities and in the states that are represented.

I, too, am impressed by the statements made about cost sharing. I frankly believe that the Corps of Engineers is not trying hard enough to take advantage of the authorization that the Congress provided in the law for flexibility. It is clearly in there that consideration ought to be given for economic hardship and where cost-sharing isn't possible. That ought to be taken into account in imposing that requirement on local sponsors and that law is just as clear as it can be on that point.

I think that we should insist this year, when we have an opportunity to in our discussions with the Corps, that they abide by that and they take that into account. Up to now, they have just been ignoring it. I think we ought to spell that out in our report and hold their feet to the fire.

Senator JOHNSTON. I very much agree with you on that, Senator Cochran. We will send that along with this testimony and give them the opinion of the committee that they should be more aggressive and ask how, for example, they would apply that to West Memphis and Glen Allen County in Mississippi and other places that are heavily impacted by both the flooding problems and the problems of low income.

Thank you very much, gentlemen.

[The statements follow:]

CLOSING STATEMENT

BY

MR. T.M. SIMMONS

GENERAL SPOKESMAN FOR THE

LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

Mr. Chairman, that concludes our list of witnesses and I wish to express the sincere appreciation for our entire group for your kind attention and we thank you in advance for the considerations that we know this Subcommittee will give to our plea for help.

Today you have heard from a group of dedicated and civic-minded individuals who have absolutely nothing to gain from their requests but they do so for that rare pleasure that comes from helping their fellowman and in almost all cases those that are less fortunate than they.

For the sake of time we have presented only a few speakers, please know that we have with us and we have many, many others at home that could attest that there does exist in great numbers those non-Federal interests that do not have the ability to pay even 25% of the cost of their desperately needed flood control project regardless of the criteria now being applied by the Executive Department and Corps of Engineers.

You have only heard from speakers from Arkansas, Mississippi and Louisiana. There are those from Illinois, Missouri, Kentucky and Tennessee who have similar problems; they cannot be financially supportable local sponsors for projects in their areas with the requirements imposed on them. Neither can they alone convince the Corps to correct their admitted design deficiencies or construct what this and other Congresses have authorized and funded. The list of examples is too long to use your valuable time expanding but each project has merits and benefits. I would like to name just a few. For flood control; St. John's Bayou and New Madrid Floodway in Missouri, Harris Fork Creek in Kentucky and Tennessee, Eight Mile Creek, West Memphis, Helena, L'Anguille River Basin, all in Arkansas; Horn Lake Creek in Tennessee and Mississippi, Yazoo Backwater Pumping Plant in Mississippi, Hurricane Protection Levees in Louisiana. For harbors: Helena, Vicksburg, Greenville and Memphis. For navigation: the White River, Yazoo River and the Red River. These are only a few.

We urge you to assist us in whatever manner you deem proper. As always the Lower Mississippi Valley Flood Control Association shall act as the agency through which all the people of the Lower Mississippi Valley may speak and act jointly on all flood control, navigation, bank stabilization and major drainage problems and we shall continue to seek Congressional asssistance for the early completion of all the Mississippi River and Tributaries Project.

Mr. Chairman, that concludes our testimony, thank you.

STATEMENT OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT OFFICE OF PUBLIC WORKS

The Louisiana Department of Transportation and Development, Office of Public Works, is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources, including flood control, navigation, drainage, water conservation and irrigation projects; therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the endorsement and recommendations for Fiscal Year 1989 appropriations for Louisiana projects. The projects listed herein are not contained in other separate statements by the Office of Public Works on the Red River Basin or the Mississippi River and Tributaries.

In making the following recommendations regarding construction, surveys and some selected operation and maintenance items, the State of Louisiana, in general, supports the President's budget recommendations for Fiscal Year 1989. These recommendations are made, not because the projects are unworthy of higher funding levels but because we agree that a balanced budget and reductions in projected deficits are worthy objectives and are in the best interest of the nation at this time; however, we also feel that water resources projects are probably the most worthwhile and cost effective projects in the Federal budget, having to meet stringent economic justification criteria not required of other programs. We ask that this be taken into consideration in the final decision making process to allocate the available funds.

PROJECT	BUDGET ALLOWANCE	AND	LOUISIANA REQUEST
Construction			
Grand Isle & Vicinity	$ 1,500,000		
Lake Pontchartrain & Vicinity, Hurricane Protection	40,400,000		
Larose to Golden Meadow	2,970,000		
Mississippi River, Gulf Outlet	500,000		
Mississippi River Ship Channel, Baton Rouge to Gulf	3,800,000		
New Orleans to Venice	12,900,000		
Ouachita & Black Rivers	2,000,000		
Ouachita River Levees, Including Bawcomville	$ 500,000		
Pearl River Slidell, St. Tammany Parish, La.	400,000		
Authorized Studies			
Amite River & Tributaries	$ 200,000		
Bayou Lafourche & Lafourche Jump Waterway	85,000		
Gulf Intracoastal Waterway, LA & TX Section	210,000		
Louisiana Coastal Land Loss and Marsh Creation	170,000		
Louisiana Coastal Shore & Barrier Island Erosion	225,000		

PROJECT	BUDGET ALLOWANCE	AND	LOUISIANA REQUEST
Louisiana Coastal Area, Hurricane Protection		200,000	
Mermentau-Vermilion & Calcasieu Rivers and Bayou Teche		400,000	
Pearl River Basin		122,000	
Upper Bayou Teche		82,000	
Vermilion River & Bayou Tigre Study		265,000	
Red River Basin, AR & LA, Comprehensive Study		450,000	
Mississippi River Gulf Outlet, Bank Erosion		81,000	
Lower Pearl River Basin, Flow Distribution		200,000	
Louisiana Coastal Area, Louisiana Comprehensive Coastal Plan		250,000	
Louisiana Coastal Area, Mississippi River Delta		200,000	
West Bank of Mississippi River in the Vicinity of New Orleans		450,000	
Westwego to Harvey Canal		600,000	
Operation and Maintenance			
Atchafalaya River, Bayou Chene, Boeuf & Black		$ 5,245,000	
Barataria Bay Waterway		2,211,000	
Bayou Bodcau Reservoir		533,000	
Bayou Pierre		40,000	
Bayou Teche		442,000	
Caddo Lake		110,000	
Calcasieu River & Pass		6,645,000	
Freshwater Bayou		953,000	
Gulf Intracoastal Waterway		14,913,000	
Houma Navigation Canal		78,000	
Lake Providence Harbor		229,000	
Madison Parish Port		110,000	
Mermentau River		1,253,000	
Bayou Segnette Waterway		10,000	
Mississippi River, Baton Rouge to Gulf		48,040,000	
Mississippi River Gulf Outlet		7,108,000	
Mississippi River Outlets, Venice		994,000	
Ouachita & Black Rivers		6,081,000	
Pearl River		146,000	
Red River Waterway - Mississippi River to Shreveport		5,256,000	
Removal of Aquatic Growth		1,460,000	
Wallace Lake		150,000	

LOUISIANA COASTAL STUDIES

Louisiana's coastal marshes are fast disappearing, our fisheries industry is deteriorating and we need to do all we can as quickly as we can to stop these losses. We are pleased that the Corps of Engineers has begun to study these problems in earnest. We desperately need the assistance. The Corps of Engineers has just published a brochure entitled "Crisis on Louisiana's Coast ... America's Loss." And it IS America's loss, not only

Louisiana's. Louisiana marshes produce each year 30% of the nation's fisheries worth $680 million and 40% of the nation's wild fur and hides harvest worth $17 million. More than 66% of the waterfowl that use the Mississippi Flyway find winter haven in Louisiana's wetlands ... another $58 million a year industry. Twenty-two percent of the nation's oil and gas production worth $27.1 billion in 1985 came from Louisiana's wetlands and offshore waters. The marshes also act as a natural buffer to hurricanes protecting the nation's investment in the inland navigation system and ports.

We were reminded of this in 1985 when a minor hurricane named Juan devastated Louisiana's coast from Vermilion Parish eastward to the Mississippi State line. The Vermilion River & Bayou Tigre Study and several other studies were requested as a result of hurricane Juan. We urge Congress to appropriate the funds requested in the President's budget for all these studies and to continue to support this effort to save the nation's natural resources and to protect its economic investment.

We wish to express our thanks to the Appropriations Sub-Committees on Energy and Water Development of the House and Senate for allowing us to present this brief on the needs of the State. Without reservation, practically every single project in Louisiana which has been made possible through actions of these committees has shown a return in benefits many times in excess of that contemplated by the authorizing legislation. The projects which you fund affect the economy of not only Louisiana but the nation as a whole. The Office of Public Works appreciates accomplishments of the past and solicits your consideration of the appropriations requested for Fiscal Year 1989.

STATEMENT OF THE LITTLE RIVER DRAINAGE DISTRICT

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

MY NAME IS LARRY D. DOWDY. I LIVE IN CAPE GIRARDEAU, MISSOURI AND SERVE AS MAINTENANCE SUPERVISOR FOR THE LITTLE RIVER DRAINAGE DISTRICT OF SOUTHEAST MISSOURI. MY TESTIMONY WILL RELATE SPECIFICALLY TO F. Y. 1989 APPROPRIATIONS FOR THE ST. FRANCIS BASIN PROJECT OF THE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT.

I AM TESTIFYING TODAY ON BEHALF OF LEVEE AND DRAINAGE DISTRICTS WITHIN THE ST. FRANCIS BASIN PROJECT IN SOUTHEAST MISSOURI AND NORTHEAST ARKANSAS. ALL OF THE DRAINAGE AND LEVEE DISTRICTS REPRESENTED ARE LOCALLY TAX FUNDED AND OPERATED AND MOST ARE DEPENDENT UPON OTHERS FOR THEIR OUTLETS INTO THE ST. FRANCIS AND MISSISSIPPI RIVERS.

THE F. Y. 1989 BUDGET INCLUDES $9.9 MILLION FOR CONSTRUCTION IN THE ST. FRANCIS BASIN PROJECT WHICH IS $1.8 MILLION LESS THAN THE CORPS CAPABILITY. WE BELIEVE THE AMOUNT IN THE BUDGET WILL ADEQUATELY FUND AND GIVE AUTHORIZED WORKS A REASONABLE AMOUNT OF PROGRESS. FURTHER, THE ST. JOHNS BAYOU AND NEW MADRID FLOODWAY HAS AN AMOUNT OF $350,000 WHICH IS EQUAL TO THE CORPS CAPABILITY. WE STRONGLY SUPPORT THESE AMOUNTS AND TRUST THAT THIS COMMITTEE WILL ACT FAVORABLY UPON THESE AMOUNTS APPROPRIATED IN THE PRESIDENT'S BUDGET FOR F. Y. 1989.

WE ALSO SUPPORT THE OVERALL ASKING BY THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION FOR THE OVERALL MISSISSIPPI RIVER AND TRIBUTARIES PROJECT WHICH AMOUNTS TO $334,297,000. WE BELIEVE THIS AMOUNT IS PROPER AND IF EFFICIENTLY APPLIED WILL BE SUFFICIENT FOR AN ORDERLY ADVANCEMENT OF ALL OF THE BUDGETED ITEMS AS SET OUT IN THE PRESIDENT'S BUDGET.

LOCAL INTEREST IS PRESENTLY FACING A NEW PROBLEM IN LIEU OF THE NEW CRITERIA THAT HAS BEEN IMPOSED UPON IT CONCERNING THE COST SHARING REQUIREMENTS. MOST LOCAL ENTITIES WILL NOT BE ABLE TO PROVIDE THEIR PORTION OF THE FIVE PERCENT (5%) UP FRONT MONEY NOR THE TWENTY-FIVE PERCENT (25%) OF THE OVERALL COST, WHICH BASICALLY MEANS THAT THE PROJECTS THAT HAVE BEEN FUNDED AND HAVE BEEN AUTHORIZED WILL NOT BE COMPLETED UNLESS THIS COST SHARING REQUIREMENT IS EITHER ALTERED OR CHANGED. IT APPEARS TO OUR DISTRICT THAT MANY PROJECTS THAT ARE NEEDED AND WILL PROVIDE THIS GREAT NATION OF OURS A GOOD RETURN ON ITS TAX DOLLARS, WILL NOT BECOME A REALITY DUE TO LOCAL INTEREST NOT BEING ABLE TO PAY. HOWEVER, THERE WILL BE SOME PROJECTS SMALL IN NATURE BUT WHICH WILL RETURN ONLY A SMALL BENEFIT THAT WILL BE DONE BECAUSE THOSE WHO ARE FINANCIALLY SUPPORTABLE WILL BE ABLE TO PROVIDE THEIR SHARE. WE WOULD ASK THAT THIS COMMITTEE DO WHATEVER IT CAN TO RELIEVE THIS BURDEN IN ORDER THAT THE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT CAN CONTINUE AND THAT THE MANY AREAS AFFECTED CAN BE ABLE TO RECEIVE BENEFITS WHENEVER NEEDED PROJECTS ARE COMPLETED.

WE GREATLY APPRECIATE BEING GIVEN THIS OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE AND TO MAKE YOU AWARE OF THE NEEDS OF OUR AREA. WE ARE CONFIDENT THAT OUR REQUESTS WILL RECEIVE THE SAME POSITIVE CONSIDERATIONS AFFORDED US IN THE PAST. WE HAVE A NUMBER OF INDIVIDUALLS PRESENT WITH US TODAY WHO HAVE TRAVELED GREAT DISTANCES AND WHO HAVE TAKEN TIME AWAY FROM THEIR BUSY SCHEDULES TO SHOW THEIR CONTINUED SUPPORT FOR THE ST. FRANCIS BASIN PROJECT. WE ALSO SUPPORT THE OTHER REQUESTS MADE BY THE OTHER WITNESSES OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION.

STATEMENT OF THE LEVEE COMMISSIONERS OF THE PONTCHARTRAIN LEVEE DISTRICT

THE LEVEE DISTRICT

The Pontchartrain Levee District extends downstream from the City of Baton Rouge a distance of 115 river miles, includes the east (left descending) bank of the Mississippi River, and is comprised of portions of East Baton Rouge, Iberville, Ascension, St. James, St. John, and St. Charles Parishes. The Mississippi River east bank levee is continuous throughout the Levee District, including the Bonnet Carre Floodway.

Extensive development of major industries has taken place in the Pontchartrain Levee District. Along with industrial growth, our Levee District has witnessed a dramatic companion increase in residential and urban expansions. Substantial portions of prime agricultural lands have now been converted to other uses. Two nationally ranked deep-water ports are located in the Pontchartrain Levee District, the Baton Rouge Port and South Louisiana Port.

The District contains large diameter pipeline systems which deliver goods to nationwide distribution points. Interstate Highways 10 and 55 and a number of major U.S. Highways traverse the Levee District, along with major railroads. The Mississippi River deep water channel for ocean going vessels and the 55-foot deep channel are a part of the Levee District Area.

All these features and many other improvements are protected by the Mississippi River & Tributaries Flood Control Project. Only through continuous, effective flood control improvements and maintenance can this area and the lower river valley meet requirements to serve national needs for industry, employment, deep-water navigation, highway and rail transportation, major pipelines, residential, agriculture and related activities.

RECOMMENDATIONS

Mississippi River Levees: (Amount Budgeted: $22,700,000)
(Amount Recommended: $22,700,000)

A reach of the Mississippi River Levee located in Iberville Parish, named the St. Gabriel Levee, is desperately in need of enlargement and slope pavement construction. During the 1973 flood, a narrow crown, potato ridge addition was hastily built on top of the old existing levee to prevent overtopping. No other improvements have been made since 1973. Plans and specifications have been completed for this work some time ago. Please do not allow further delays. Also, that reach of main line levee located in St. James Parish downstream from the Sunshine Bridge was damaged by River scour actions resulting in loss of the riverside levee toe about fifteen feet wide and greater. Damaged in 1973, needed repairs have not yet been accomplished. Enlargement of the River Levee in the City of Baton Rouge is needed to bring the size up to full project section. There are other levee construction needs. The Board of Commissioners, Pontchartrain Levee District, urges appropriation of at least $22,700,000 for levee construction in fiscal year 1989. This same amount is carried in the Budget.

Channel Improvement: (Amount Budgeted: $94,900,000)
(Amount Recommended: $94,900,000)

Main line levees must be pretected from caving banks throughout the lower river reaches where extremely narrow battures are the last line of defense against crevasses and failures. There simply is no place left for levee setbacks in the Pontchartrain Levee District. The only proven remedy is to stabilize these continually eroding banks with construction of revetment.

Funding levels of the past few years for Mississippi River Channel Improvement should not be allowed to decline, and this level of spending represents a cutback. Revetment work in Louisiana below Old River is only about sixty percent complete. Postponement of critical locations will result in higher costs and could cause levee setbacks. The Pontchartrain Levee District, Board of Commissioners, urges Congress to appropriate $94,900,000 for fiscal year 1989, which is the budgeted amount.

Lake Pontchartrain Hurricane Protection Project

The Pontchartrain Levee District is the local assuring agency for that portion of the project in St. Charles Parish. Full cooperation is being given to the Corps of Engineers.

Moving around Lake Pontchartrain past St. Charles Parish, we find that no hurricane protection is provided for St. John the Baptist, St. James and Ascension Parishes, a portion of the Levee District. Cities and Towns such as LaPlace, Reserve, Gramercy, Lutcher, Paulina, Grand Point, Sorrento and vicinities of each, are damaged and flooded with each threatening hurricane. For this same area, the study entitled "West Shore Lake Pontchartrain Hurricane Protection, Louisiana" was recently reported unfavorable. It is difficult to believe that the proposed project is not economically feasible. We are disappointed.

The Board of Commissioners, Pontchartrain Levee District, recommends Congress to appropriate adequate funding to advance the project on an orderly basis.

CONCLUSION

The Board of Commissioners, Pontchartrain Levee District, compliments the Subcommittees on Energy and Water Development for the keen understanding of the real needs for the MR&T Flood Control Project and the efficient, alert actions taken to appropriate funds for its many complex requirements. Special commendations are extended to distinguished Louisiana Members of those Committees, Congresswoman Lindy Boggs and Senator Bennett Johnston. We endorse recommendations presented by the Association of Levee Boards of Louisiana, Louisiana Department of Transportation & Development, Lower Mississippi Valley Flood Control Association, Red River Valley Association and Ouachita River Valley Association.

STATEMENT OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION

I am Joseph F. Mooney, Jr. of Clarksdale, Mississippi, and I am the Chief Engineer for the Yazoo-Mississippi Delta Levee Board. Our levee district and our sister district, the Mississippi Levee Board headquartered at Greenville, Mississippi, represent the Delta portion of the Yazoo Basin in matters of flood control and drainage. It is on behalf of those citizens that we present this statement.

We join with the other members of the Lower Mississippi Valley Flood Control Association in the request for the budgeted appropriations of $334,297,000 to be spent on the FY 1989 program for the Mississippi River & Tributaries Project. We support the request of $32,600,000 in FY 1989 Appropriations for the Yazoo Basin portion of the MR & T Project.

After careful consideration of a number of factors including the national economy, the amount of work currently scheduled or under construction, etc., the Board of Levee Commissioners has concluded that the recommended budget figures for FY 1989 will allow work to progress at a reasonable and orderly rate. There are, however, other important matters that need to be brought to the attention of your committee. These matters include, but are not limited to, the effects of cost sharing on local projects, the effect of ability to pay on local projects, the need for concurrent mitigation on certain projects, and the need for determined progress of projects that affect human lives and personal property.

Today, our association is presenting witnesses who will testify to specific aspects of some of those problems. We know that you will give them your very careful attention, and that you will also realize that these are specific examples of relatively common problems. Our written statement will address several of those problems as they relate to the Yazoo Basin.

The Yazoo Backwater Pumping Plant - The Yazoo Backwater Pumping Plant is an integral part of the Yazoo Backwater Project which was formulated in 1941. As the construction of the backwater project was being planned, a decision was made to substitute a gravity outlet structure and postpone the construction of the pumping facility until such time as the full extent of the need could be determined. While that may have been a wise decision technically, it certainly was not a prudent decision otherwise. When the time came to begin the construction of the pumping plant, claims were made that the pumping plant was a separable item and should be subject to cost sharing.

The attempt to place the Yazoo Backwater Pumping Plant under cost sharing provisions is a totally unfair one. There is no way that the

local interests can raise the amounts of money required for cost sharing to deal with a problem which is not of local origin. The problem in the backwater is a direct result of the waters of the Mississippi River which come from the drainage of 41% of the continental United States. We respectfully urge the Congress to declare that this Yazoo Backwater Pumping Plant is in fact not subject to cost sharing and construction should continue immediately.

The Upper Yazoo Projects - For a period of time, the Upper Yazoo Projects came under serious attack through newspaper articles, through generation of form letters, and through circulation of wildlife oriented newsletters. These attacks were generated partly by a few landowners who did not wish to give up any of their land for rights of way, by concerned sportsmen who were given mis-information about the project, and by certain wildlife professionals who are dedicated to stopping flood control and drainage projects everywhere regardless of merit. At first these opposition voices were all that were heard. Gradually, however, the voices of the people who are affected by the project began to be heard through their duly elected officials - as the Levee Boards, the Delta Council, various Boards of Supervisors, various Mayors and Town Boards, and prominent community leaders began to speak out in support of the project. When the true facts began to become known, the tenor of news articles changed drastically, and many local newspapers began to editorialize in support of the project.

When such an attack occurs on a water resources project, there is little that can be done other than to make a concerted effort to get the true facts known. In the case of the Upper Yazoo Projects, however, there is one very important thing that remains to be done. There must be an approved plan of mitigation as soon as possible. It is our understanding, and it is the claim of the wildlife professionals, that the law of the land now requires concurrent mitigation of flood control projects. The Corps of Engineers has prepared one or more draft plans of mitigation for the UYP, and we desperately need one or more of those plans to move up through the approval process as quickly as possible.

We respectfully urge the committee to require that the plan of mitigation be moved through the process of approval as rapidly as possible, and that the committee be kept informed of its progress. With such a plan of mitigation, the concerns of many sportsmen and environmentalist will be put to rest, and the best interest of all the citizens will be served.

STATEMENT OF THE BOARD OF MISSISSIPPI LEVEE COMMISSIONERS

I am Newman Bolls, Chief Engineer, Board of Mississippi Levee Commissioners, Greenville, Mississippi, and I have the privilege of presenting this statement on behalf of that Board and the citizens of this levee district comprising the counties of Bolivar, Washington, Issaquena, Humphreys and Warren in the lower Yazoo Basin in Mississippi.

The Lower Mississippi Valley Flood Control Association will present a general statement in support of $340,297,000 for FY89 for the construction, surveys, advanced engineering and maintenance for the Mississippi River and Tributaries Project. This represents only a $6 million increase over the proposed President's Budget for the Yazoo Backwater Pumping Plant Project in Mississippi. In the case of the Yazoo Backwater Pumping Plant Project in Mississippi, these funds are needed to continue the construction of this project that is already underway and to let a contract for the pumps and motors for a project that is so vital to the western half of the State of Mississippi. We concur in the request as indicated above but will deal principally with the Yazoo Basin in Mississippi in this report.

The allocations in the President's Budget for the Yazoo Basin in Mississippi are as follows:

YAZOO BASIN, MISSISSIPPI

Project	FY1989 Budget
Upper Yazoo Projects	$ 5,465,000
Main Stem	1,200,000
Tributaries (Except Ascalmore-Tippo-Opossum Bayous)	4,300,000
Demonstration Erosion Control	17,725,000
Big Sunflower - Steele Bayou	3,800,000
Yazoo Backwater - Including Muddy Bayou	110,000
Total	32,600,000
Additionally, we request: Yazoo Backwater Pump Plant Project	6,000,000
GRAND TOTAL - YAZOO BASIN - MISSISSIPPI (Construction)	$ 38,600,000

The Yazoo Basin in Mississippi is a unique area and is recognized as being one of the most productive agricultural areas in the entire world. It is highly diversified, however, and does not depend upon agriculture alone for it has great industrial development over the entire area. By being in the alluvial delta of the lower Mississippi River, it is absolutely dependent upon flood control and interior drainage for its very survival. The project as designed is very complex and each item as listed above is an integral part of the whole and they must all be in proper balance and operating efficiently for the project to function as designed.

Each of these figures we have stated and recommended are capital investments in the future of this nation and play an increasing role in providing food, fiber and manufactured goods for this nation and the world. More and more stress will be placed upon this area and in the future due to the urbanization of the rest of the nation, and it is only through the proper utilization and preservation of this land that the expanded role that is being thrust upon the Yazoo Basin in Mississippi can be fulfilled.

One of the major problems facing the entire central area of the United States is massive soil erosion. Records show that in the course of the year some 200,000,000 tons of sediment are in transport in the Mississippi River at the rate of approximately 365,000 tons a day and is lost forever. A project underway in the upper reaches of the Yazoo Delta known as the Demonstration Erosion Control Project could have such far-reaching and beneficial effects upon this nation that it is most imperative that this project be continued, expanded and utilized throughout this nation to try to bring this mass erosion problem under control. The President's Budget has recommended, and we strongly support, the appropriation of $17,725,000 to continue this project.

The upper Yazoo Projects are main stream Yazoo and Tallahatchie channel improvement projects which will effectively reduce stages on these two rivers by as much as 5'. This work will benefit several thousand acres of land in seven counties by reducing the frequency and duration of flooding. The President has recommended $5,465,000 which can be effectively used to continue this vital project and we strongly recommend and support this appropriation.

The Big Sunflower River Project which, at the present time involves only Steele Bayou and Black Bayou, has been recommended for an appropriation of $3,800,000 for FY89. When this project was originally designed, mitigation was proposed for the Swan Lake area which is now the Yazoo Wildlife Refuge and, on a year-round basis, provides shelter and food for vast numbers of migratory water fowl and upland game native to the Yazoo Basin in Mississippi. A major portion of these funds will be used for the mitigation and enhancement measures and we feel it is highly important and necessary that this important feature of the project be continued and expedited as much as possible. We, therefore, support the recommended appropriation of $3,800,000 for the Big Sunflower River Project in Mississippi.

The most pressing problem and need in our entire area is the Yazoo Backwater Pumping Plant Project. As far back as 1941, Congress recognized, with the advice of the U.S. Army Corps of Engineers, that because of certain decisions that had been made, this area in the lower end of the Yazoo Basin in Mississippi that has been titled the Yazoo Backwater area, was subjected to great additional risk and was, therefore, entitled to special protection. When the Flood Control Act of August 15, 1941 was enacted, Congress authorized the construction of this project and designated it as the Yazoo Backwater Project which included levees, flood gates and a pumping plant. This was the first such project authorized in the lower Mississippi Valley; yet it is still the only one that has not been completed.

The lands on the eastbank at the lower end of the Yazoo Basin were continually sacrificed for west bank improvements and protection for those upstream even though this area enjoyed a superiority in land elevation to those over those west bank lands that were receiving protection. Year after year, this area was promised that it would be provided these protections as soon as funds were made available and the other major improvements were completed. We have reached that stage now where these so frequently made promises should and must be fulfilled.

At the present time, the Backwater levee system has been completed, the flood gates at Steele Bayou and Little Sunflower River, though undersized, have been completed as has the major channel improvements above this area, which result in the more rapid discharge of their damaging flood waters into this area. This sacrificed area then must store all of the combined discharge until it can be released by gravity flow which has actually created a man-made impoundment that has doomed this area to continued destruction unless these pumps are installed.

This committee very wisely appropriated funds for the inlet and outlet channels and the cofferdams which were completed in October 1987 indicating conclusively to one and all that this project is physically under construction. An additional $1,450,000 was aprpopriated in FY1988 to complete the General Design Memorandum and design of the pumps. This further convinces us that the Corps tacitly recognizes that this project is underway. Still there are contentions that "cost sharing" is required before other segments of this vital project are allowed to continue. We contend that this is (1) not a separable item but is and has been an integral part of the Mississippi River and Tributaries Project since 1941; (2) not subject to cost sharing inasmuch as the project is physically under construction; and (3) by no means can this area contribute the required cost sharing funds charged to this project.

The Backwater Area was created by man, has further been sacrificed for the protection of other areas, and even now is being sacrificed daily. This devastation, loss of population and financial losses have resulted in this area becoming one of the poorest and most deprived sections in our nation. This is emphasized graphically by the Resolution introduced by Senators Cochran, Bumpers, Pryor and Bennett in the Senate and by Congressman Mike Espy in the House declaring the Lower Mississippi Valley to be a deprived area and in desperate need of special attention. There is no way that "cost sharing" should and can be borne by the Yazoo Backwater Area. A promise was made by the Federal Government to these people and must be fulfilled. Clarifying language must be inserted in the law which will exempt this region from cost sharing and allow it to develop its long-lost potential.

We always appreciate most sincerely the consideration given to us by members of this Committee and for the generosity they have demonstrated in the past.

STATEMENT OF LEVEE DISTRICT NO. 3, MISSISSIPPI COUNTY, MO

Mr. Chairman:

The Committee on Public Works and Transportation, U. S. House of Representatives, in a resolution dated September 23, 1987, authorized the Corps of Engineers to begin a reconnaissance study on alternatives to the use of the Birds Point-New Madrid Floodway.

Levee District Number 3 of Mississippi County, Missouri, hereby requests the committee on Energy and Water Resources to appropriate $500,000 under the Mississippi River and Tributaries Project, in order that the Corps of Engineers may initiate the reconnaissance study authorized by the Congress.

TOMBIGBEE RIVER AND TRIBUTARIES STUDY, MISSISSIPPI

STATEMENT OF ROBERT S. WEIR, EXECUTIVE DIRECTOR, TOMBIGBEE RIVER VALLEY WATER MANAGEMENT DISTRICT

Senator JOHNSTON. Next, we have Mr. Robert Weir, who is the executive director of the Tombigbee River Valley Water Management District, to speak about various Mississippi projects for 5 minutes.

Mr. WEIR. Mr. Chairman and distinguished Senators of this committee, I am Robert Weir. I represent the Tombigbee River Water Management District, a water resource agency of the state of Mississippi.

I have submitted a statement in support of fiscal year 1989 funding for certain projects that have been proposed by the U.S. Army Corps of Engineers and the U.S. Soil Conservation Service, and I will not go into detail on those projects.

However, there is an area of concern that I want to voice to this committee today. Even though these problems may not originate in this committee, we want to take into consideration the essence of money and the essence of time in order to continue to develop our area of the country.

Our concern is water supply. We feel that water supply should also be considered within proposed water projects by the Corps of Engineers. Any type of structure constructed, whether it be for flood control, navigation, recreation, or other needs, should also include the potential for a water supply source.

We further feel that these necessary projects can only be accomplished with the continuing assistance of the Army Corps of Engineers and the Soil Conservation Service through the U.S. Department of Agriculture, along with numerous state and federal agencies. We recommend that funding for the full capabilities of these agencies be approved in order that we may continue to address these needs.

Such request is made in reference to the following authority: The Committee on Public Works and Transportation of the House of Representatives adopted a resolution on September 19, 1984, that authorized and directed the Secretary of Agriculture and the Army Corps of Engineers to make joint investigations and surveys of the Tombigbee River basin, Mississippi and Alabama, and the Tuscumbia River basin in Mississippi.

A report that will be prepared and submitted to the committee in compliance with the provisions of Public Law 639, 87th Congress, will contain the investigations and survey results which are in the best interest of flood prevention and control, soil erosion and siltation control, water quality control, water supply, recreation, fish and wildlife, environmental quality, watershed protection, and allied purposes.

It is also to be noted that the cost sharing required by Congress may jeopardize this area in fulfilling many of the most needed water resource projects. Congress' consideration of the cost-sharing requirement is hereby requested. I know that you have already alluded to that and I know that you are very concerned about that, and we appreciate that concern very much.

As sponsor for many water resource projects through the years, Tombigbee River Valley Water Management District has financially participated and is willing to continue to do so within our limitations. However, we do feel that some projects may be prohibited due to our inability to cost-share the amount now required.

The Tombigbee River Valley Water Management District remains dedicated in the promotion of the Tennessee-Tombigbee Waterway to its greatest potential. Your support, along with your foresight, has played a vital role toward not only the future of our area, but for mid-America, and for this we are grateful. I will submit my statement as to the projects and as to the funding that we are in support of.

I would like to close by commenting that, from the state of Mississippi, we are proud of our two Senators that sit on this committee. They have always supported us in our efforts and we appreciate their efforts, their labors, and their dedication for doing so.

Thank you.

Senator JOHNSTON. Thank you very much, Mr. Weir.

Senator Cochran may have a question for you.

Senator COCHRAN. Thank you, Mr. Chairman.

I just want to welcome Mr. Weir to the subcommittee again. It is always good to have the benefit of your observations and testimony about the ongoing need of the TenTom Waterway project. This subcommittee, of course, and those who are here today have supported very enthusiastically and have gone the extra mile in helping us with this project, and I know that we can continue to count on the support for the operation and maintenance of this very important project.

It is meaning a great deal in the economic development, Mr. Chairman, as you know and others know, but the potential is still to be realized. I think that the future is very bright for this area because of this

project and I commend you for the continued effort that we are making in keeping it going and taking advantage of the benefits that it will provide.

Mr. WEIR. Thank you, Senator.

Senator JOHNSTON. Thank you very much, Mr. Weir.

Mr. WEIR. Thank you, Mr. Chairman.

Senator JOHNSTON. I am one of those who supported the Tenn-Tom at Senator Cochran's behest and Senator Stennis' behest and others, and I might say that when the price of petroleum gets up to where it is going, and it is going up, then Tenn-Tom and these other projects are going to be much, much more valuable. They are already valuable to this country, but they are going to be much more valuable and those benefits are going to come pouring in.

Thank you, Mr. Weir.

[The statement follows:]

STATEMENT OF THE TOMBIGBEE RIVER VALLEY WATER MANAGEMENT DISTRICT

SUMMARY

TENNESSEE-TOMBIGBEE WATERWAY PROJECT - PL 525, 79TH CONGRESS
MISSISSIPPI AND ALABAMA

RECOMMENDING CONTINUED FUNDING THAT WILL ALLOW CONTINUED OPERATION AND MAINTENANCE OF THIS PROJECT TO THE FULL CAPABILITY OF THE CORPS OF ENGINEERS.

TOMBIGBEE RIVER AND TRIBUTARIES

FLOOD CONTROL PROJECT - PL 85-500, 85TH CONGRESS
MISSISSIPPI AND ALABAMA

RECOMMENDING CONTINUED SUPPORT OF FLOOD CONTROL PROJECTS ON THE TOMBIGBEE RIVER AND TRIBUTARIES IN THE STATE OF MISSISSIPPI TO THE EXTENT OF THE CORPS OF ENGINEERS' FULL CAPABILITY.

TOMBIGBEE RIVER BASIN, MISSISSIPPI AND ALABAMA, AND TUSCUMBIA RIVER BASIN, MISSISSIPPI

FLOOD PREVENTION AND CONTROL, SOIL EROSION AND SILTATION CONTROL, WATER QUALITY CONTROL, WATER SUPPLY, RECREATION, FISH AND WILDLIFE, ENVIRONMENTAL QUALITY, WATERSHED PROTECTION AND ALLIED PURPOSES - RESOLUTION BY THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION OF THE HOUSE OF REPRESENTATIVES, UNITED STATES OF AMERICA, ADOPTED SEPTEMBER 19, 1984

RECOMMENDING FUNDING TO THE FULL CAPABILITIES OF THE U. S. ARMY CORPS OF ENGINEERS AND U. S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE.

The Tombigbee River Valley Water Management District was created for the purpose of developing and conserving the human and natural resources of our region of Mississippi. We represent twelve member counties located in Northeast Mississippi consisting of approximately 350,000 people; however, our projects may benefit a larger area and a considerable larger population.

Our agency has proudly served as the official sponsor to the U.S. Corps of Engineers in the construction of the Tennessee-Tombigbee Waterway. We consider this Waterway a

masterpiece of technology that was performed by the Corps. We continue to salute the Corps for a job well done.

Tombigbee River Valley Water Management District has also proudly served in the sponsorship of a great number of flood control projects and other water related projects that have resulted in considerable benefit to our area of the country.

Our goals are to continue addressing and resolving the needs of the people of our area. These benefits can become reality by assisting our farmers, landowners, and timber farmers in controlling damages to their lands through some type of water management program.

Many of our residences and businesses are experiencing such burdens of risk from uncontrolled flood waters, land erosions, soil deterioration, not mentioning, property damage.

We must allow our people to operate under free enterprise and support them through extending some relief by reducing their burden of risk that may confront them.

One crucial needed project is the Luxapalila, a tributary of the Tombigbee River. Luxapalila originates in Alabama and flows through the metropolitan area of Columbus, Mississippi before emptying into the Tombigbee River. During flood season, many homes and businesses experience flooding which result in considerable damage to property. The risk of flooding creates additional expenses for all involved such as a loss of business, high premium for insurance coverage, loss of productivity and reduction of value to land.

The Corps and our agency have invested time, effort, and expense in studying this problem. All studies have revealed that this project is very feasible.

I hereby request that adequate appropriation be made for the implementation of the Luxapalila Project.

A comprehensive water resource plan must be implemented to give relief to flood and drainage problems and soil erosion to agriculture and timber lands in the area. These problems must be addressed through snagging and channelization of tributaries and watershed projects developed to curb problems created by rivers and creeks in the area that deprive our farmers of a considerable amount of farm land that could be utilized and benefit people throughout our nation and world.

As we prepare for the future, we feel that such a comprehensive water management plan will not only be a relief to our farmers and landowners, but we can also utilize the surface water as a solution for our water source for our residents and industry. The results of several studies addressing the supply of our ground water indicate a crucial concern for potential industries in their consideration of locating or expanding in this area along with a similar concern by our residents of what the future may hold regarding this necessary commodity.

There is a need to convert our rainfall in this area into an asset through a retention program. Our ground water aquifers are decreasing at an alarming rate due to population and industrial growth. It is important that we continue to devote our efforts toward the conservation of our lands and natural resources.

Water supply should also be considered within proposed water projects by the U.S. Corps of Engineers. Any type of structure constructed whether it be for flood control, navigation, recreation, or other needs to also include the potential for a water supply source.

We further feel that these necessary projects can only be accomplished with the continuing assistance of the U.S.

Army Corps of Engineers and the U.S. Soil Conservation Service through the U.S. Department of Agriculture along with numerous state and federal agencies. We recommend that funding for the full capabilities of these agencies be approved in order that we may continue to address these needs. Such request is made in reference to the following authority: The Committee on Public Works and Transportation of the House of Representatives, United States, adopted a resolution on September 19, 1984 that authorized and directed the Secretary of Agriculture and the U.S. Army Corps of Engineers to make joint investigations and surveys of the Tombigbee River Basin, Mississippi and Alabama, and Tuscumbia River Basin, Mississippi. A report that will be prepared and submitted to the Committee in compliance with the provisions of Public Law 639, Eighty-Seventh Congress, will contain the investigation and survey results which are in the best interest of flood prevention and control, soil erosion and siltation control, water quality control, water supply, recreation, fish and wildlife, environmental quality, watershed protection and allied purposes.

It is also to be noted that the cost sharing required by Congress may jeopardize this area in fulfilling many of the most needed water resource projects. Congress' consideration of the cost sharing requirement is hereby requested.

As sponsor for many water resource projects through the years, Tombigbee River Valley Water Management District has financially participated and is willing to continue to do so within its limitations. However, we do feel that some projects may be prohibited due to our inability to cost share the amount now required.

Tombigbee River Valley Water Management District remains dedicated in the promotion of the Tennessee-Tombigbee Waterway to its greatest potential. Your support along with your foresight has played a vital role toward not only the future of our area, but for Mid-America and for this we are grateful.

STATEMENT OF HON. JAMES SASSER, U.S. SENATOR FROM TENNESSEE

Senator JOHNSTON. Senator Sasser of Tennessee is recognized.

Senator SASSER. Thank you very much, Mr. Chairman. I was unavoidably detained on the Senate floor and was unable to be here to hear the testimony from the Representatives of the Lower Mississippi Valley Flood Control Association.

I do have a statement, Mr. Chairman, regarding the lower Mississippi Valley flood control projects that I would ask unanimous consent be included in the record.

Senator JOHNSTON. Without objection.

Senator SASSER. Thank you, Mr. Chairman

[The statement follows:]

Statement of Senator Sasser

MR. CHAIRMAN, I WOULD LIKE TO WELCOME THE REPRESENTATIVES OF THE LOWER MISSISSIPPI VALLEY FLOOD CONTROL ASSOCIATION WHO HAVE COME TO PRESENT TESTIMONY TODAY. THE ASSOCIATION SERVES A VITAL FUNCTION IN PROMOTING THE ECONOMIC DEVELOPMENT OF THE LOWER MISSISSIPPI VALLEY THROUGH THEIR WORK ON FLOOD CONTROL PROJECTS THROUGHOUT THE REGION. I HAVE WORKED CLOSELY WITH THE ASSOCIATION OVER THE YEARS ON PROJECTS AFFECTING MY STATE, AND I HAVE BEEN VERY IMPRESSED WITH THEIR EFFORTS.

MR. CHAIRMAN, TODAY I WOULD LIKE TO TAKE THE OPPORTUNITY TO COMMENT ON ONE FLOOD CONTROL PROJECT THAT I KNOW IS OF CONCERN TO THE ASSOCIATION AND THAT IS OF PARTICULAR IMPORTANCE TO TENNESSEE. I RECENTLY TOURED THE ENSLEY LEVEE IN MEMPHIS WITH ARMY ASSISTANT SECRETARY ROBERT PAGE, WHO OVERSEES THE CORPS OF ENGINEERS. THE LEVEE WAS COMPLETED BY THE CORPS IN 1968, AND SINCE THAT TIME IT HAS BEEN PLAGUED WITH PROBLEMS. BECAUSE OF THE SANDY CONTENT OF THE SOIL, FLOODWATERS SEEP BENEATH THE LEVEE AND WEAKEN IT.

IN ORDER TO REMEDY THIS PROBLEM, A SEVEN MILE LONG LAND SEEPAGE BERM MUST BE CONSTRUCTED ALONG THE LEVEE. UNDER THE 1986

WATER QUALITY ACT, THE COST OF CERTAIN PROPOSED PROJECTS SUCH AS THE BERM MUST BE BORNE IN PART BY LOCAL GOVERNMENTS. HOWEVER, THE SEEPAGE PROBLEM HAS EXISTED SINCE THE CONSTRUCTION OF THE LEVEE, AND IT SHOULD THEREFORE BE CLASSIFIED AS A "PROJECT DEFICIENCY". UNDER THE ACT, THE FEDERAL GOVERNMENT MUST PAY THE FULL COST OF REPAIRING A PROJECT DEFICIENCY. I THEREFORE REPEAT MY REQUEST OF THE CORPS OF ENGINEERS THAT THEY COMPLETE THE BERM AS SOON AS POSSIBLE.

THANK YOU, MR. CHAIRMAN.

STATEMENT OF LT. GEN. EDGAR S. HARRIS, JR., USAF (RETIRED), PRESIDENT, RED RIVER VALLEY ASSOCIATION

Senator JOHNSTON. Next we have a really outstanding group among outstanding groups, but this one is from the Red River Valley Association with my friend, Gen. Ed Harris, president, as the master of ceremonies; and Don Duggan, who is the chairman of the board.

General HARRIS. Senators Johnston and Cochran, we appreciate this opportunity of appearing here this evening. We have been hearing all types of rumors out in the corridors about some things that are taking place up here and I am sure that everybody is excited about who the new leader of the Senate might be.

We congratulate you, and we hope that it turns out like we are hearing it is going to turn out, out in the corridors.

Senator JOHNSTON. If I can just get Senator Cochran to vote for me, I will be in. [Laughter.]

Mr. DUGGAN. I am sure he will.

This reminds me somewhat—you know, I used to be in the drilling rig business, and still would be if I could sell them, and we had a customer come in one time and he looked one over and without a word being said, he says, "I'll take it." The sales manager says, "You can't have it, we have to make our pitch."

We know you are running behind time, and you know all about our project, do you want the full pitch or do you want to save a little time?

Senator JOHNSTON. I think you are kind of preaching to the choir up here. [Laughter.]

Mr. DUGGAN. We are aware of all that, so, in the interest of saving time for you, which we know that you need and you are running behind already, we are going to abbreviate our remarks.

You know who we are and what we stand for, you know what we need, and I am sure that the mail you get from home tells you about the economic conditions in the four-state area. It seems that everybody that had anything to do with oil are depressed.

The Wall Street Journal says that we are have an 8-year low unemployment nationwide at 5.6 percent. We are at 12 percent in Shreveport and 15 percent in many areas of east Tennessee and central Louisiana. So, we need help.

In short order, we are expecting to start locks and dams 4 and 5 and that they be constructed simultaneously with lock and dam 3. Can you take care of that?

Senator JOHNSTON. We expect to be able to.

Mr. DUGGAN. In view of that, that is all I am going to say. [Laughter.]

I am going to recognize my colleagues, and we are going to ask Mr. Bollinger from the great State of Oklahoma to lead off our testimony.

[The statement follows:]

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

Mr. Chairman and members of the committee. I am Don Duggan, Chairman of the Board of the Red River Valley Association, a 63 year old organization representing citizens from all walks of life in the four states comprising Arkansas, Louisiana, Oklahoma and Texas, who are vitally concerned with the continued development of the water and land resources of the Red River Basin.

You will be addressed during our presentation today by my colleagues from each of the four states that are represented by our association regarding specific needs within their own state. Before they begin, I would like to briefly comment on a few concerns for the future physical and economic well-being of the millions of citizens residing in this four state Red River Basin area.

Since 1983 these four states have been severely depressed by the collapse of the Oil & Gas industry; the number of drilling rigs has diminished from a high of 4600 to a present low of 941. The Wall Street Journal reported this past week that average unemployment nationwide was 5.6, an 8 year low. Yet, Louisiana has hovered around the 12% mark for several years with some areas in East Texas and Central Louisiana reaching 16%. While cheaper energy is one of the main factors in helping the economic growth in other parts of the country, the subsidy of foreign oil and cheaper prices severely hamper the recovery of our area. I say that as background so you will understand why it appears to many of us that we have been somewhat sacrificed by the Administration, despite the fact that we think we have more than paid our dues in windfall profits taxes, and little is being done to alleviate our plight. Also, it might help you better understand why we are so concerned about the potential and progress of these projects on the Red River.

In November 1987 we dedicated the completion of Lock & Dam #2, a few miles south of Alexandria, Louisiana, and last month the Corps of Engineers awarded the contract for completion of Lock & Dam #3. We want to thank you for the tremendous support you members of this committee have given Red River Navigation to bring it this far. But since full benefits of the waterway cannot begin until completion, we still need your support for the simultaneous construction and completion of the remaining two locks & dams by the mid-1990's.

We continue to lose thousands of acres of valuable land due to bank

erosion, resulting not only in loss of non-replaceable farm land but also posing a threat to levees, bridges and utility lines.

Clean water is increasingly critical to our future. Also, other benefits of the Red River, such as stimulation of tourism through recreational development, are strong factors in the economic outlook of our area.

Again this year we are coming to you to humbly and sincerely ask for your understanding and help to fund these needs, provide these jobs, and complete these projects that will give us the opportunity to diversify from oil and gas to a broader based economic resurgence.

RED RIVER VALLEY ASSOCIATION
FUNDING REQUEST FOR FISCAL YEAR 1989

The following provides a quick review of the funding requests contained in the Red River Valley Association's Program of Work for FY89. Specific information on the individual projects may be found on the pages indicated.

PROJECT	RRVA REQUEST
BASIN WIDE PROJECTS	
Red River Waterway Project	$ 146 million
Red River Basin Chloride Control	FCC
Red River Basin Comprehensive Study	FCC
Bank Stabilization of the Red River	FCC
Levees and Bank Stabilization Below Denison Dam	3 million
Emergency Bank Protection	7.7 million
Bank Stabilization Index, Arkansas, to Denison Dam	500,000
Mississippi River and Tributaries Flood Control Project	FCC
ARKANSAS PROJECTS	
APPROPRIATION RESOLUTIONS	
Red River Waterway Project - Shreveport, LA, to Index, AR	FCC
Reshaping Levees	500,000
Red River Leeves and Bank Stabilization Below Denison Dam	250,000
LOUISIANA PROJECTS	
APPROPRIATION RESOLUTIONS	
Cypress-Black Bayou Watershed	FCC
Atchafalaya Basin	FCC
Red River Backwater Area	FCC
Aloha-Rigolette Project	8.3 million
Lower Red River South Bank Levee	FCC
Eastern Rapides-South Central Avoyelles Drainage District	FCC
Lower Red River Levees	FCC
AUTHORIZATION AND/OR APPROPRIATION RESOLUTIONS	
Bayou Cocodrie and Tributaries	FCC
Bayou Rapides Pumping Station	FCC
Red River Master Plan for Recreation	FCC
Red River Hydropower	FCC
OKLAHOMA PROJECTS	
APPROPRIATION RESOLUTIONS	
Lukfata Project	FCC
McGee Creek	8.5 million

FCC = Full Corps of Engineers Capability

OKLAHOMA PROJECTS (Continued)	
AUTHORIZATION AND APPROPRIATION RESOLUTIONS	
Parker Lake	FCC
TEXAS PROJECTS	
APPROPRIATION RESOLUTIONS	
Red River Navigation Daingerfield Reach	FCC
Cypress Basin	FCC
Cooper Lake and Channels	25.9 million
AUTHORIZATION RESOLUTIONS	
Red River Above Denison Dam-Crowell Site	FCC
McGrath Creek Project	FCC

RED RIVER VALLEY ASSOCIATION
PLATFORM, RESOLUTIONS AND PROGRAM OF WORK

INTRODUCTION

The Red River Valley Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

For the past 63 years the Association has done notable work in the support and advancement of a program to develop the land and water resources of the Valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the area along the Waterway.

The resolutions contained herein were adopted by the Association during its 63rd Annual Meeting in Shreveport, Louisiana, on February 10-12, 1988, and represent the combined concerns of the citizens of the Red River basin area as they pertain to the goals of the Association, specifically:

....Economic and Community Development
....Flood Control
....Bank Stabilization
....A Clean Water Supply for Residential, Commercial, Industrial and Agricultural Use
....Solar and Hydroelectric Power Generation
....Navigation

The Red River Valley Association is aware of the constraints on the federal budget, and have kept those restraints in mind as the resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in these resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

Don H. Duggan
Chairman of the Board

Edgar S. Harris, Jr.
President

Lynn Lowe
Vice Chairman, Arkansas

Joe D. Waggonner, Jr.
Vice Chairman, Louisiana

William C. Chapman
Vice Chairman, Oklahoma

Robert Mansell
Vice Chairman, Texas

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas; and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana/ Shreveport, Louisiana, to Daingerfield, Texas/Shreveport, Louisiana, to Index, Arkansas/and vicinity of Index, Arkansas, to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana, reach.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Average annual shipping on the waterway is expected to be over 12 million tons, and estimated benefits are in the amount of $146 million annually. This type of progress should not be denied citizens of the Red River Basin and the nation. In order to begin realizing project benefits and minimize future project cost increases, planning, design and construction should proceed in an orderly fashion in order to achieve project completion in a reasonable period of time.

With the Red River Navigation project's Lock and Dam #1 and the John H. Overton Lock and Dam completed, the Red River Valley Association believes it an economic imperative that construction on the remaining three locks and dams continue on an established and organized schedule so that the project is completed on the Shreveport-Bossier City reach during FY 1994. Construction on Lock and Dam #3 began during FY86 and a completion contract was awarded on March 31, 1988. We call upon Congress to continue construction on Lock and Dam #3 in earnest during FY 1989, and to endorse the resolution that Locks and Dams #4 and #5 begin construction as soon as possible. Jointly with construction of the Locks and Dams we urge continued work in Pools 3, 4 and 5; specifically we request that in addition to currently scheduled work in these pools that construction be initated on Blenheim Revetment, Westdale Realignment, Bull Revetment, Hammel Revetment, Williams Downstream extension and Fausse Capout and Extension.

At present, the communities of Alexandria/Pineville, Natchitoches, Colfax, and Shreveport/Bossier City are in the process of planning and developing public port facilities for their respective areas.

Alexandria/Pineville, in a cost-reimbursable construction contract with the Corps of Engineers, initiated construction of a port facility in 1985 and are planning for full development of their port facility. With the interim pool of John H. Overton Lock & Dam, navigation to the port facilities is a reality. The port is now in use.

The Caddo-Bossier Port Commission has already purchased 1,100 acres for a public port/industrial park complex, and is planning to acquire an additional 900 acres because of the intense interest for a public port facility among existing industries in the Port Commission's service area which extends to Dallas-Ft. Worth. (A 1981 port users survey commissioned by the Port Commission shows a total of more than 12 million tons of cargo would go through a public port facility in the Shreveport/Bossier City area from companies now existing in the

Ark-La-Tex.)

Planning to ensure that public port facilities will be ready to benefit the local, state and national economy when navigation is returned to these communities has been made tremendously difficult because of the lack of a firm construction schedule for the remaining two Locks and Dams. Thousands of badly needed jobs are at stake, and, therefore, the Red River Valley Association urges Congress to appropriate construction funds for FY89 for the full capability of the Corps of Engineers in order to allow the continued orderly construction of the remaining three Locks and Dams so that they can be completed by FY94 to allow sensible planning to proceed, and to ensure that the project lives up to its full economic development potential in the soonest possible time frame.

Additionally, the Red River Valley Association urges Congress to provide $100,000 for resumption of preconstruction planning on the waterway segment from Shreveport, Louisiana, to Daingerfield, Texas; $520,000 for preconstruction planning on the segment from Shreveport, Louisiana, to Index, Arkansas; and $350,000 for preconstruction planning on the segment from Index, Arkansas to Denison, Texas. These funding levels are required for FY89 to result in comprehensive coordinated advancement of these basinwide features. Planning on the upper reaches must continue in order to initiate construction which would complement ongoing construction in the lower reach and ultimately provide the maximum project benefits to the people of the Red River Basin and the nation.

RED RIVER BASIN CHLORIDE CONTROL

The availability of an ample supply of clean water for use by the communities along the Red River has become an increasingly major concern of the millions of citizens residing in the basin. More and more, communities along the river are finding themselves faced with critical shortages of water for current as well as future use. Solutions being developed by individual communities are not only extremely costly, but in many cases, are leading to unacceptable rivalry between the states and communities along the river.

The Red River Valley Association, because of this need for a reliable clean water supply for economic growth as directly related to agriculture, municipal, and industrial benefit, is vitally concerned with the control of the ten natural salt pollution areas within the upper Red River Basin. The Association has actively supported the work of reducing man-made pollution of the river and has followed, with keen interest, the work of the Corps of Engineers in finding sources of natural salt pollution and devising ways of abating them.

Construction of a ring dike to test application of backhead as a means to suppress individual brine springs was completed at Estelline Springs, Texas, (Area V) in 1974. Today, the structure is operated as a permanent control installation and successfully contains approximately 80% of the total chloride load emitted from Area V.

Construction on Area VIII, which includes the Truscott Brine Lake, was begun in February 1977, and the Area VIII facilities were placed in operation in May 1987. Section 1107 of the Water Resources Development Act of 1986 authorizes

construction of the control measures at the remaining area (Area VI, VII, IX, X, XIII, XIV and XV) at full Federal expense upon transmittal of a report to the Secretary of the Army and to the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives of a favorable finding of the effectiveness of the operation of Area VIII. This report is to be made by a panel consisting of representatives of the U. S. Geological Survey and the Texas Water Commission, a person selected by the National Academy of Sciences, and two other qualified persons to be appointed by the Secretary with the concurrence of the governors of Texas and Oklahoma. The panel has been established and has initiated its review of Area VIII.

RED RIVER BASIN COMPREHENSIVE STUDY

The Red River Basin Comprehensive Study, authorized by P.L. 98-63, 30 July 1983, was initiated in October 1983. A reconnaissance report was submitted in March 1985 by the Tulsa District of the Corps of Engineers which primarily covered Oklahoma. Feasibility level studies are scheduled for completion in September 1988 by the Tulsa District. The Vicksburg District of the Corps of Engineers will undertake its reconnaissance studies and initiate feasibility studies upon receipt of funds. The comprehensive study will recommend measures for: flood control, development of water supply, treatment and conveyance facilities, generation of hydro-electric power, development and enhancement of the recreational potentials and enterprises of the region, and improvement of the rivers for navigation and port site development to specifically include the initiation of a study from Shreveport, Louisiana, to Index, Arkansas, and to all points between.

The Red River Valley Association agrees with the position Congress has taken regarding cost-sharing on this project (P.L. 98-360) and strongly supports continued funding of the study for all portions of the Red River Basin. The Red River Valley Association also requests Congress to appropriate full Corps of Engineers capability level funds for feasibility studies at 100% Federal cost as per the directive contained in the specific language in the 1985 Energy and Water Appropriations Bill (P.L. 98-866).

BANK STABILIZATION OF THE RED RIVER

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

Red River Levees and Bank Stabilization below Denison Dam is the authorization for constructing levees, flood control structures, and bank stabilization below Denison Dam. The facilities constructed under this authorization are the first lines of flood protection for the Red River Valley and its citizens. Accelerated and new caving of the river banks of Red River continue to endanger existing flood control structures and levees as well as valuable agricultural lands, highways, railroads, utilities, homes and other valuable resources and improvements within the Red River Valley. A systematic program of bank stabilization and other flood control measures can prevent these disastrous losses that are presently occurring.

BASIN WIDE PROJECTS (Continued)

Because of the planned construction of the Red River Waterway Project, a dangerous tendency has developed to de-emphasize construction of flood control and bank stabilization works under the Red River Levees and Bank Stabilization program. This tendency should be halted and reversed lest the impression be created that the program is no longer needed or has been completed. Additionally, emphasis should be given to coordination of all levee and bank stabilization work along the river with plans for future navigation. This would help insure proper alignments, thus minimizing future navigation construction costs.

The Red River Levees and Bank Stabilization below Denison Dam Project is the only comprehensive flood control program on the Red River containing authorization for construction of a variety of flood control measures, levees and other flood control works. Some of the projects planned in the original authorization project have not been completed, and these must be constructed in order for the citizens of the Red River to derive necessary flood protection.

No funds were appropriated by Congress for the Red River Levees and Bank Stabilization Below Denison Dam in FY83, and only the minimum amounts were provided in FY84, 85 and 86. Bank caving on Red River has progressed in several locations to a critical state. Railroads, major public highways, levees and other flood control works are threatened, and unless action is taken in the near future, these facilities will be destroyed, endangering lives and property of the citizens of the Red River Valley.

Therefore, it is imperative that Red River Levees and Bank Stabilization Below Denison Dam continue as authorized by Congress and that adequate funding be appropriated to accomplish the construction of this needed protection. The Red River Valley Association recommends that $3 million be appropriated for this project in FY89 for the construction of these improvements and protection.

EMERGENCY BANK PROTECTION

Although Federal projects have been authorized for flood control and navigation, many active caving banks cannot be stabilized because they are not yet sufficiently advanced or not included in earlier authorizations. The result is continuing rampant destruction of valuable lands, threatening vital flood control facilities and endangering high-cost improvements, such as bridges, pipelines, highways, railroads, utilities, cities and towns.

It is urgent that adequate funding of the item "Emergency Bank Protection" be continued to construct bank stabilization work as early as possible in the most critical locations instead of waiting several more years and experiencing the loss of million of dollars due to damages. Further, continued neglect of these caving banks will substantially worsen alignment of the River, making future navigation realignment and stabilization much more costly and difficult. Many present caving banks have an existing
alignment that is usable for the authorized navigation channel and should be preserved now.

In view of the critical needs for immediate bank stabilization at many locations

along the river, and the great unnecessary losses to caving activity which have been suffered by the people of the Red River Valley in the past and which can be expected to continue in the absence of immediate stabilization construction, the Red River Valley Association requests that the Congress appropriates $7.7 million in FY89 for Red River Emergency Bank Stabilization, and in addition, to require that $4,200,000 of such funds remain available until expended for construction of the Red River Emergency Bank Protection, Arkansas and Louisiana project, with the Secretary of the Army to be directed, as a minimum to award continuing contracts in Fiscal Year 1989 for construction and completion of each of the following features of the Red River Emergency Bank Protection Project: Bear Realignment, Brown Realignment, and Slay Bend Revetment, with none of those contracts to be considered fully funded, but to be contracts to be initiated with funds appropriated for FY89.

BANK STABILIZATION INDEX, ARKANSAS, TO DENISON DAM

Widely fluctuating stages and high flows during the past several years have caused sharp increases in bank caving along the Red River from Index, Arkansas, to Denison Dam. This accelerated bank caving has caused the loss of valuable vital improvements and non-replacable prime agricultural lands. Flood control structures and levees which protect the Valley from disastrous floods are also endangered. These disastrous losses can be stopped by a systematic program of bank stabilization. Progressive construction of such a program is absolutely essential to the safety, growth, and well-being of the Red River Valley. To further delay this vitally needed protection would be short-sighted.

In view of the fact that construction of bank stabilization is so badly needed, and that the states of Oklahoma, Arkansas and Texas have agreed to the authorized cost-sharing requirements, the Red River Valley Association requests that $500,000 be appropriated in FY89 to continue preconstruction planning work.

MISSISSIPPI RIVER AND TRIBUTARIES FLOOD CONTROL PROJECT

The Red River Valley Association endorses the Mississippi River and Tributaries Flood Control Project, including all of its features and components, and stresses the importance of aggressively completing all features, particularly as it relates to the Red River Basin and its improvements. Since the Red River is a major factor in the Mississippi River and Tributaries Flood Control Project, the Red River Valley Association endorses the flood control and navigation improvements of the MR&T Project and necessary appropriations for completion.

APPROPRIATIONS RESOLUTIONS

RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA TO INDEX, ARKANSAS

Completion of the Red River Waterway Comprehensive Bank Stabilization project to Index, Arkansas, will significantly boost the economy throughout the river basin and provide jobs in the area. Great economic benefit will accrue not only to that portion of the river wherein navigation is currently authorized, but also to the area between Shreveport, Louisiana, and Index, Arkansas, resulting from a comprehensive bank stabilization program. This type of program should not be denied citizens of the Red River Basin and the nation.

The Red River Valley Association urges the Congress to appropriate $520,000 for the continued planning of the reach of Red River from Shreveport, Louisiana, to Index, Arkansas. Adequate funding is required to result in comprehensive coordinated advancement of these basin-wide features which will allow construction to commence as soon as possible in the reach between Shreveport and Index. Planning on this upper level must be accomplished in order that construction can be completed for the navigable portion of the channel from the Mississippi River to Shreveport on a timely basis, as this project will complement the navigation channel so that maximum basin benefits can be provided simultaneously.

RESHAPING LEVEES

The Red River Valley Association recommends Congress provide funding of $500,000 to initiate construction, or pre-construction planning if necessary, of the reshaping of the levees on the main stem of Red River in Arkansas to conform the levees to the new flow line established by a recent study of the Corps of Engineers.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

For the past several years no appropriations have been included for projects to be constructed under Red River Levees and Bank Stabilization Below Denison Dam, but it remains and authorized program to meet special needs. A special need exists for the replacement of a completely failed flood control gate and the levee contiguous to it in the McKinney Bayou Drainage Ditch in Miller Country, Arkansas. The gate was constructed to control high stages in McKinney Bayou caused by head-water flows and or back-water conditions caused by high stages on the Red River. Either of these conditions can cause serious flooding of valuable farm land above the failed flood control gate.

It is imperative that the failed flood control gate be replaced before flood stage again occurs on the Red River in that proximity or in the area drained by McKinney Bayou Drainage Ditch. The Red River Valley Association recommends $250,000 to initiate design of a new drainage structure to replace the failed McKinney Bayou Drainage Structure which is a feature of the Red River Levees

and Bank Stabilization Below Denison Dam Project. We ask you to direct the Secretary of the Army to initiate the design of a replacement structure in FY89, and to complete the design and construction in subsequent years on a schedule to be determined by the Chief of Engineers.

LOUISIANA PROJECTS

APPROPRIATION RESOLUTIONS

CYPRESS-BLACK BAYOU WATERSHED

Local interests and the state of Louisiana, in cooperation with the United States Department of Agriculture Soil Conservation Service, have advanced construction of this project to the point where many benefits are being realized. Features of the project include: land treatment measures, two multiple purpose reservoirs for irrigation, recreation and municipal water supply, a comprehensive recreational facility development, and approximately 55 miles of channel improvement for flood prevention and agricultural water management, and 11 weirs, two pumping plants and water control structures for distribution and irrigation use of water. The features of the watershed remaining to be constructed are channel improvements, weirs, pumping plants and water control structures. Through these features, the agricultural water needs of the central Bossier Parish, Louisiana, area can be met during most years. Additionally, some assistance is provided in meeting municipal and industrial water needs.

The Red River Valley Association expresses its sincere appreciation for Congressional support in funding the Cypress-Black Bayou Watershed development, and recommends that the financial support necessary for completion of the project be provided.

ATCHAFALAYA BASIN

The Atchafalaya Basin is a key element in the flood control plan for the Mississippi River and its Tributaries, that directly involve the Red River Basin area. Flood control is the primary purpose of the Atchafalaya Basin and its capability must be maintained and improved.

The Red River Valley Association opposes any plan for use of the Atchafalaya Basin which reduces its effectiveness for flood control. However, the Association does not oppose other uses of the basin, provided they do not interfere with or prevent its use for flood control purposes.

The Association urges that the studies being made on the Atchafalaya Basin area be completed as soon as possible, and construction of the necessary flood control works in the area be resumed immediately.

RED RIVER BACKWATER AREA

The 1941 Flood Control Act authorized protection of additional areas in the Red River Backwater Area, where justifiable. A review in the late 1950s concluded that additional flood protection works were justified and authorized for the Larto Lake to Jonesville area, the Sicily Island area, the Below Red River area, and the Tensas-Cocodrie area.

The Larto Lake to Jonesville area and the Tensas-Cocodrie area levee system have been constructed and the Tensas-Cocodrie Pumping Station is completed. The Tensas-Cocodrie levees, however, are below grade and need to be enlarged.

The Red River Valley Association requests that funds to allow continuation of this project be made available by Congress.

Advanced planning of the Below Red River Project is continuing and the recommended plan has been endorsed as the best levee plan by the U. S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries. The Red River Valley Association requests that Congress approve sufficient funds for the completion of advanced planning of the Below Red River Project.

A planning report for the Bushley Bayou Project has been completed. The Red River Valley Association requests Congress to provide funds for continuation of planning of this project.

Construction of these projects should be completed at the earliest possible time to provide the protection determined to be justified, authorized, and necessary by the U. S. Army Corps of Engineers.

ALOHA-RIGOLETTE PROJECT

This project, initially authorized in 1941 and constructed during the period 1948-54, provides for the protection of some 58,000 acres of alluvial land during high stages of the Red River. Drainage from 340,000 acres that must flow through protected areas during lower river stages is disposed of by gravity flow through two 10 ft. by 10 ft. gated concrete drainage structures in the levee at the lower end of the project. This protected area has continued to develop agriculturally since construction of the project and now additional gates are needed to allow adequate gravity drainage during low river stages. As a result, local interests have requested that additional studies be made of the project, paying particular attention to the adequacy of the floodgate which has now been determined to be significantly inadequate for current conditions.

A study underway by the New Orleans District of the Corps of Engineers is scheduled for completion shortly. The Red River Valley Association urges that Congress appropriate the full capability of the Corps FY89 to initiate preconstruction engineering and design activities for the project so that it can be advanced to the construction stage as soon as possible; that Congress authorize the additional construction recommended in the New Orleans District report, and that $8.3 million be appropriated for this construction.

LOWER RED RIVER SOUTH BANK LEVEE

The South Bank Levee is a feature of the Mississippi River and Tributaries Flood Control Project and calls for improvement of the existing levee from the community of Hot Wells, Louisiana, to Moncla, Louisiana. Construction procedures include: strengthening and enlarging substandard levee reaches, raising the levee to the designed grade, bank stabilization to protect the levee, and other miscellaneous levee and roadway improvements. This levee is of extreme importance since it protects 1.25 million acres of valuable lands and

improvements from flooding. This work should be completed in a timely and orderly manner; therefore, the Red River Valley Association endorses an adequate appropriation by Congress for FY89.

In addition, the Red River Valley Association requests full Corps capability for replacement of the Bayou Rapiodes gravity flow gated structure through the levee at Bayou Rapides. The structure was damaged during recent high water and no longer functions at needed capacity. Since the structure is the responsibility of the Federal government, separate Congressional authorization for replacement is requested.

EASTERN RAPIDES-SOUTH CENTRAL AVOYELLES DRAINAGE DISTRICT

After many years of delay, the Eastern Rapides-South Central Avoyelles Drainage Project was authorized as a feature of the Mississippi River and Tributaries Flood Control Project. Unfortunately, construction has not been started subsequent to the authorization of 1970.

This project encompasses the upper part of a drainage system that would directly and indirectly benefit parts of the parishes of Rapides, Avoyelles and Evangeline, where more than 206,000 acres of valuable agricultural land are subject to flooding. Flooding of this acreage occurs at least four times a year. This flooding is the result of Federal government authorized construction of the South Bank Red River Levee and the West Atchafalaya Basin Protection Levee which intercepted the natural drainage channels. Additionally, one large urban community, Alexandria, Louisiana, has been adversely affected by the poor drainage conditions that drastically need improvement.

There is an urgent need to begin work on this extensive project, which would traverse southeasterly from Alexandria for some 80 miles before entering the Atchafalaya Basin Floodway. Many studies have been made, and public hearings have been held. However, it has come to our attention that after all of these studies and hearings, additional mitigation is now being required as a result of comments by the U.S. Fish and Wildlife Service, delaying completion of the final report.

The Red River Valley Association strongly recommends that the Corps of Engineers expedite their review of the project so that construction can begin as soon as possible.

LOWER RED RIVER LEVEES

The South Bank Levee in the Red River, Atchafalaya and Bayou Boeuf Levee District from Boyce, Louisiana, to Moncla, Louisiana, is a feature of the Mississippi River and its Tributaries Flood Control Project. A continuation of this same levee from Moncla to Lake Long, Louisiana, is under a different authorization, thereby denying the benefits of the MR&T authorization to the people and property in the protected area. The North Bank Levee of Red River, in the same levee district, does not benefit from the MR&T authorization, yet they also protect the lives of many people and vast areas of farm land and improvements.

Both the South Bank and the North Bank Levees of the Red River are part of a continuous protective system; the lower few miles from Moncla to Lake Long are a part of that system. The Red River Valley Association recommends that Congress authorize the Corps of Engineers to review the present authorization of these levee systems, with the view of including all portions in the same MR&T authorizations so as to provide equal benefits and protection to the people and property of the Red River Basin Area in Louisiana.

AUTHORIZATIONS AND/OR APPROPRIATIONS

BAYOU COCODRIE AND TRIBUTARIES

This project was authorized in 1941 and provides a drainage outfall for a large area of central Louisiana, including 120 miles of drainage channel, three water control structures, and a major drainage structure in the West Atchafalaya Basin Protection Levee. The upper 100 miles of the project extending from Rapides Island west of Alexandria, Rapides Parish, to the town of Washington, St. Landry Parish, is known as the Bayou Bouef-Cocodrie Diversion Channel. The lower 21 miles is Bayou Courtableau.

Most of the project was completed in 1952. Since that time, as a result of extensive developments throughout this intercepted drainage area, stages in the main channel system have continued to rise and have exceeded the design water surface by several feet on a number of occasions. Under present conditions, widespread flooding of agricultural lands and extensive damages from flooding of residential areas occur and continues increasing with each passing year. There is a critical need for improvement to these drainage channels which are intercepted by construction of the Red River South Bank and West Atchafalaya Floodway Levees.

For the lower part of the project (Bayou Courtableau), advanced engineering and design were considered to be completed in 1980. It now appears that additional studies of this portion of the project are necessary. These additional studies will continue to delay construction of several P.L. 566 projects for drainage improvements in this area which have not been allowed to proceed because of inadequate outlet through Bayou Courtableau. For the upper part of the project, Bayou Boeuf-Cocodrie Diversion Channel, the system is under a continuing re-study to determine improvements that need to be accomplished in the system.

The Red River Valley Association urges that these additional studies be promptly completed so that construction of this outlet can begin.

BAYOU RAPIDES PUMPING STATION

The Bayou Rapides pumping plant was constructed in 1930-31 by the state of Louisiana and the Red River, Atchafalaya and Bayou Boeuf Levee District with a pumping capacity of 100,000 gallons per minute. Located beneath the pumping station are six reinforced concrete gated openings to provide drainage by gravity when Red River stages permit. During high river stages, the floodgates must

remain closed. The present pumping capacity should be increased eleven times to 1,100,000 gallons per minute which is necessary to provide reasonable protection against flooding for a 25-year storm frequency. The pumping station is a necessary integral major structure incorporated into a complicated drainage system for the City of Alexandria, Louisiana, and connects to the Bayou Rapides-Bayou Cocodrie Drainage systems, and the Red River.

As a major structural feature providing for intercepted drainage resulting from Federal levee construction, it is clearly established that replacement of this pumping station with an adequate capacity is a responsibility of the Federal government.

The Red River Valley Association strongly urges the Corps of Engineers to expand the existing Bayou Cocodrie and Tributaries study and include the Bayou Rapides Pumping Station as a feature of the overall interconnected drainage system, with a view to authorization and construction of adequate pumping and/or drainage facilities. Further, if such addition to the existing study results in drastic delay and/or funding impacts, the Red River Valley Association recommends separate Congressional authorization for this urgently needed study.

RED RIVER MASTER PLAN FOR RECREATION

Recognizing that recreation is an integral component of the Red River Waterway Project, the Association supports the development of recreational facilities as a part of the overall project construction. A Master Plan for Recreation has been cooperatively developed by the Red River Waterway Commission of Louisiana and the Corps of Engineers. The Red River Valley Association urges construction of the recreational facilities in accordance with the Master Plan.

RED RIVER HYDROPOWER

The Red River Waterway Commission in Louisiana recently received authorization from the Louisiana Legislature to develop hydropower on the Red River Waterway in Louisiana, and has been working closely with the U. S. Army, Corps of Engineers, and the Southwestern Power Administration, U. S. Department of Energy, to conduct a feasibility study for hydro-electric power development on the locks and dams on the Red River Waterway Project.

The Red River Waterway Commission of Louisiana has indicated that it is prepared to provide 100 percent of the construction costs of the hydro-electric power facilities after the project is authorized by Congress and prior to the start of construction if satisfactory contractual arrangements for the disposition and repayment of the funds can be made. Additionally, the Commission has recently written to the U. S. Army, Corps of Engineers, requesting that they expedite completion of its hydropower feasibility study.

In view of this strong local support, the Red River Valley Association requests the U. S. Army, Corps of Engineers, to expedite completion of the study and requests Congress to provide adequate funding for that purpose in FY89.

APPROPRIATION RESOLUTIONS

LUKFATA PROJECT

Lukfata Lake on Glover Creek in central McCurtain County in southeastern Oklahoma was authorized by the Flood Control Act of 1958 as a component of the seven-reservoir system for flood control in the Little River Basin. All of the reservoirs except Lukfata Lake have been completed; without the Lukfata project, the system does not function as planned.

In the Energy and Water Development Appropriations Bill of 1982, HR97-177, 14 July 1981, the Committee on Appropriations directed the Corps, within the limits of available funds, to study the potential of hydropower generation of Lukfata Lake. A preliminary study was completed in May 1983. The study showed that a 65 mega-watt hydropower plant could be developed as a part of the project at the lower site. Consultations between the U. S. Fish and Wildlife Service and the Tulsa District Corps of Engineers have resulted in an opinion by the USFWS that the proposed project would adversely affect an endangered species, the leopard darter, and its habitat, and threaten its continued existence. Since the opinion, Tulsa District has conducted additional studies to obtain information that could be used in designing a workable mitigation plan for the darter. (A mitigation plan would have to be included in a request for exemption from the Endangered Species Act.) Funds appropriated for FY88 will be used to make laboratory studies of the potential for artificial propagation of the leopard darter and to reformulate alternative hydropower plans using updated power values. The project is not economically feasible based on October 1986 power values and price levels.

McGEE CREEK

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation Laws by P.L. 94-123, September 28, 1976. McGee Creek Lake is located in Atoka County in southeastern Oklahoma. McGee Creek is a northern tributary of the Red River. The damsite is about 3.4 miles above the confluence of McGee and Muddy Boggy Creeks. The project was authorized for water supply, flood control, and recreation. Construction began on the project in June 1982.

The Red River Valley Association strongly supports continuation of this project, and the concept demonstrated in the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development. The Association recommends the members of the McGee Creek Authority to continue to cooperate with the basin interests to fully develop the economic potential of this project for the benefit of the project area and the nation. The Red River Valley Association requests that $8.5 million be provided to continue this project, including all roads associated with the project.

AUTHORIZATION AND APPROPRIATION RESOLUTIONS

PARKER LAKE

Parker Lake on Muddy Boggy Creek is an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study. The project would provide protection against the standard project flood and a dependable water supply of 42 million gallons per day for municipal and industrial facilities.

Congress authorized construction of Parker Lake in the FY85 supplemental appropriations bill (P.L. 99-88, 15 August 1985) contingent upon the execution of a local cost sharing agreement with a non-Federal entity. In September 1985, the Oklahoma Water Resources Board provided a draft letter of assurance for cost sharing on Parker Lake. Since that time, the Office of Management and Budget and Assistant Secretary of the Army (Civil Works) have stated that, based on the percentage of flood control provided, Parker Lake was a single-purpose project and there was no federal interest in construction.

The Red River Valley Association believes the congressional intent for federal construction of the Parker Reservoir Project was reaffirmed by its subsequent inclusion in the Water Resources Development Act of 1986, Title VI, Water Resources Conservation and Development. In light of such, we recommend that the Administration direct the Army to resume cost sharing negotiations with appropriate non-federal entities.

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TEXAS PROJECTS

APPROPRIATION RESOLUTIONS

RED RIVER NAVIGATION - DAINGERFIELD REACH

The Red River Navigation Project should be viewed as a whole project producing benefits for the entire region and nation. Piecemeal deauthorization of project features associated with the Navigation Project, such as the Shreveport/Dainger-field reach, should not be allowed to occur. The Red River Valley Association fully supports the continuation of the authorization for the Shreveport/Dainger-field reach, and requests that $100,000 be appropriated in FY89 for resurvey and resumption of preconstruction planning.

CYPRESS BASIN

A feasibility study of the Cypress Basin to include an investigation of the proposed Lake Marshall was authorized and funded by Resolution of the Committee of Public Works and Transportation in May 1979. The study has been completed and is awaiting review by Southwestern Division of the Corps of Engineers. The Red River Valley Association supports full development of the basin as set forth in the Red River Compact.

COOPER LAKE AND CHANNELS

The Cooper Lake and Channels Project was authorized by the 84th Congress on August 3, 1955, for the construction, control, recreation and water supply benefits to the citizens of this nation. The Corps of Engineers and three local entities, Sulphur River Municipal Water Districts, North Texas Municipal Water District and the City of Irving, have been attempting to build this project since its authorization. The project has been delayed since 1978 by litigation to modify the Environmental Impact Statement. That litigation has now been resolved.

The Corps of Engineers has made what it considers to be the required modifications on the Cooper Lake Project, which is desperately needed by the local participants for water supply, and by the City of Texarkana for replacement flood control storage in Lake Wright Patman. The Red River Valley Association recommends that the Congress fund the project in the amount of $25.9 million in FY88, and that all recreational facilities be constructed at Federal cost.

AUTHORIZATION RESOLUTIONS

RED RIVER ABOVE DENISON-CROWELL SITE

A more detailed feasibility report must be prepared on the proposed Crowell Site on the main stem of the Pease River to take into account more realistic values of all benefits. This investigation should be started at once since this portion of the Red River Basin is particularly short of usable water for municipal, industrial and agricultural uses. Additionally, this reservoir would be very

valuable as a flood control project.

Within a few years, with the control of natural pollution as proposed by the Corps of Engineers Ark-Red Chloride Control Program, this water can be used for irrigation purposes and other purposes mentioned above, and it is now time that the necessary report and feasibility study on this proposed site be started.

This proposed project has been endorsed and is supported by Wilbarger, Foard, Hardeman, Cottle and Childress Counties, and the Soil Conservation District serving these counties and the Cities of Vernon, Quanah, Childress, Crowell and Paducah, as well as the Four Winds Foundation, consisting of Childress, Cottle, Hardeman and Foard Counties, and the Four Winds RD&D, and many farm and civic organizations.

The Red River Valley Association supports the Pease River Reservoir Steering Committee in its request, and recommends the Corps of Engineers to expedite its efforts to develop a plan of improvement for the area.

McGRATH CREEK PROJECT

McGrath Creek is a tributary of Holliday Creek and drains approximately six square miles of highly urbanized watershed within the City of Wichita Falls. A flood control project for Holliday Creek is currently under construction by the Corps of Engineers. Damage in excess of $20 million occurred on the McGrath Creek watershed during a flood which occurred in May of 1982. A feasibility study suggesting a $9.4 million project has been released by the Corps of Engineers. The City is pursuing Section 201 funding for this project and the City of Wichita Falls is prepared to pay the local match.

The Red River Valley Association strongly encourages the Congress to authorize funds for continued planning and investigations during the upcoming budget year so that work can proceed in conjunction with the ongoing Holliday Creek Project. This project is necessary for protection for a very large segment of highly urbanized land and is fully compatible with the Holliday Creek over-all design.

FEDERAL LEGISLATION AND POLICIES

NON-FEDERAL COST SHARING

The Water Resources Omnibus Bill was signed into law by President Reagan on November 17, 1986. Non-federal cost share provisions set forth in this important piece of legislation include:

— Flood Control — 25-50%, with a minimum of 5% cash up-front during construction.

— Hydropower — 100% reimbursable.

— M & I Water Supply -- 100% up-front during construction or reimbursable with interest.

— Agriculture — 35% up-front or reimbursable.

— Recreation — 50% up-front or reimbursable.

— Fish and Wildlife Enhancement — 0% for national benefits; 25% up-front or reimbursable if benefits are local.

Feasibility Level Studies — 50% during the course of the study, with a minimum of 25% in cash — up to 25% may be provided in-kind. (Excludes inland navigation studies involving dams, locks and channels.)

Even though these and other cost-sharing provisions are generally outlined in the Omnibus Bill, there still remains substantial leeway for interpretation and formulation of guidelines. The Red River Valley Association highly recommends that the federal government solicit state and local input towards implementation of equitable and realistic cost-sharing guidelines.

NATIONAL ENVIRONMENTAL POLICY ACT

While recognizing the need and intent of the Congress in passing the National Environmental Policy Act of 1969, the Red River Valley Association also believes that the interpretation of this act has caused unnecessary economic hardship to the general public. The delay in start of projects beneficial to the general goodwill causes the real cost of the projects to increase significantly, often to the point that they no longer are economically beneficial.

The Red River Valley Association requests Congress to revise this Act to:

1 Streamline Administration procedures under the Act to speed up the time for completion and review of an Environmental Impact Statement in a Federal project.

2. Recognize Man as a part of the environment and require that the effects upon Man be taken into account in the preparation and analysis of an Environmental Impact Statement.

3. Require that any person, association or other entity contesting the

adequacy of the Administration procedures in preparation and/or review of Environmental Impact Statements be required to post bond in evidence of financial responsibility to reimburse the constructing agency for cost of delay in the event that the Environmental Impact Statement and/or procedure appealed is found to be adequate, if not otherwise provided by existing law.

The membership of the Red River Valley Association is concerned about unwarranted delays that add additional costs to Red River Basin projects resulting in severe hardships on the citizens of the Red River Basin. The membership urges that Congress direct public officials and agencies to proceed with sound long-range development of the Red River Basin and its resources for the benefit of Arkansas, Louisiana, Oklahoma and Texas.

RIGHTS-OF-WAY RESPONSIBILITIES

The Flood Control Act of 1946 provided for enlargement of existing levees and construction of certain authorized levees on Red River below Denison Dam. Language in the Act requires local interests to be responsible for all lands, easements and/or rights-of-way required for construction of the improvements. Levee districts and local governing bodies have found that the number of enlargements, setbacks and berms have progressively increased and rights-of-way costs have sharply increased, particularly in the past 10 years. Financial burdens resulting from increased costs for rights-of-way have steadily depleted limited revenues and funds of levee districts and local public bodies throughout the Basin area. The impact is so great that presently there are serious monetary problems and realistic doubt as to the abilities of various levee districts to continue to meet financial obligations.

The requirement of local interest to furnish all rights-of-way is not consistent with Congressional policy and is not compatible with other major river basin projects for flood control. It is obvious that modifications are drastically needed to correct these inadequacies.

The Red River Valley Association recommends Congress amend the 1946 Flood Control Act to permit Federal reimbusements to levee district and local governing bodies for fair market value of lands taken for all flood control purposes, including construction of new levees, levee setbacks, levee enlargement, levee turnovers, berms and cutoffs as necessary. Such modification is required at an early time to help relieve local levee districts and governing bodies of an extreme financial burden, and to assure progressive advancement of the flood control program in the Basin.

UNIFORM RELOCATION ASSISTANCE ACT

Red River Basin Levee Districts and the Red River Waterway Commission are experiencing increasing costs in the construction of navigation systems and construction and operation of flood control systems. The tax base of the basin lands is not capable of supporting additional tax loads to fund the relocation costs associated with levee setbacks, flood control works and navigation projects.

FEDERAL LEGISLATION AND POLICY RESOLUTIONS (Continued)

The Federal Government through Public Law 91-646, known as the Uniform Relocation Assistance Act, provides that these relocation costs are the responsibility of and must be borne by local interests. The requirements and guidelines established in this Act are such as to be extremely costly.

The Red River Valley Association requests the Congress to amend the Federal Uniform Relocation Assistance Act to provide for Federal payment of all such costs related to the construction of flood control and navigation projects in the Red River Basin of Arkansas, Louisiana, Oklahoma and Texas.

MAINTENANCE OF CHANNEL STABILIZATION WORKS

Past experience on the Red River and many other river projects has shown conclusively that maintenance of channel stabilization works by local interests is impractical. Rapid changes in river conditions and alignment, such as occur frequently on Red River, demand drastic extensions and revisions of existing protective works, and, occasionally, required changes are so radical that relocations are necessary. Experienced personnel, special equipment and certain materials are not normally available from local interests when needed, and the costs of these items exceed the financial capabilities of local levee districts.

The Red River Valley Association recommends to Congress that the Corps of Engineers be authorized and directed to maintain all bank stabilization and channel training work on the Red River.

RED RIVER BASIN BENEFICIAL USES OF SALT WATER

On September 23, 1982, the U. S. House of Representatives Committee on Public Works and Transportation adopted a resolution directing the Corps of Engineers to determine the feasibility of salt gradient solar ponds and associated power generation equipment to collect and store solar energy and to generate electric power in the Red River Basin.

The inherent thermal storage capability of salt gradient solar ponds and the associated solar pond power plant concept offers a potentially viable alternative energy source which makes use of abundantly available natural resources (sun, salt and land) and existing technology (i.e., heat exchangers and low temperature turbine generators). The necessary resources are readily available in the Red River Basin, particularly in western Texas and Oklahoma where there are identified sources of salt brine in economical quantities feasible for use in conjunction with solar ponds.

Limited scope reconnaissance studies performed in FY84 by the Tulsa District of the Corps of Engineers indicate a strong likelihood that a system of solar pond power plants can be economically feasible when constructed in conjunction with the chloride control measures in the Red River Basin. The report recommends expanded reconnaissance studies be made in the basin. The Red River Valley Association supports the investigation and requests that the stated FY89 capability level of the Corps of Engineers be appropriated at 100% Federal cost to continue these studies.

FEDERAL LEGISLATION AND POLICY RESOLUTIONS (Continued)

HYDRO-ELECTRIC POWER DEVELOPMENT

When Red River Basin projects were initially authorized, the need for alternate energy sources was not deemed of paramount importance to the welfare of the nation, and, therefore, hydro-electric power generation was not incorporated as a feature in any of the authorized projects.

Since the mid-1970s the energy situation has changed drastically, forcing the nation to begin investigating methods of developing and utilizing alternate energy sources such as hydro-electric power. In keeping with this important trend, the Corps of Engineers has been authorized to conduct feasibility studies for hydro-electric power development on the locks and dams of the Red River Navigation Project, as well as other projects in the Red River Basin.

The Red River Valley Association strongly urges continued funding for these feasibility studies to ensure that optimum power generation can be achieved through these projects while, at the same time, insuring that the water supply needs of the communities affected by these projects continue to receive priority emphasis.

FEDERAL PROCEDURES FOR A PROJECT STUDY

Current procedures require the Corps of Engineers to hold three or more public hearings for all studies authorized by Congress. The initial public hearing held at the beginning of the study provide the proponents and opponents of the proposed project ample opportunity to express their desires and needs. Prior to submission of the completed study to higher authority for review, a final public hearing is required. Additional interim public meetings are held to obtain recommendations of the local interests. These additional interim hearings result in an overall project delay, increased study costs and, being repetitious, do not advance the project in any way. Former procedures used by the Corps of Engineers requiring the Division Engineer to issue a Notice of Survey Report to all interested parties effectively accomplished the overall purpose of the second public hearing. The Red River Valley Association is opposed to the project study procedure requiring the additional hearing, and recommends that the former procedure be re-established.

CHANGES DURING A FEDERAL STUDY

During the phase of completing the General Design Memorandum for an authorized project, local interests, levee boards and the state governmental offices of primary interest should be kept advised of the study progress. In particular, any changes of the originally authorized plan as it may affect the project and/or the purpose of the project should be communicated to the local and state governments.

EMPLOYMENT OF LOCAL PEOPLE

A significant advantage of construction projects by the Corps of Engineers is

the employment of local people, benefiting the unemployed and providing higher employment of the under-employed within the project area. Corps of Engineers policies allow that construction contracts be written to require that up to 80 percent of the labor force involved be local labor. Even so, a great majority of the labor force employed by private contractors on the Red River Waterway projects come from out of state. According to the Red River Valley Area Council, there are qualified and skilled construction workers in the Red River Valley who could perform the work required.

The Red River Valley Association urges the Corps of Engineers and Congress to do all within their power and within the law to enforce and encourage the employment of as many people as possible from the surrounding local communities in the construction of the Federal projects along the Red River Waterway.

COST OF STORAGE FOR MUNICIPAL AND INDUSTRIAL WATER

Federal laws under which the multi-purpose Federal water projects were authorized, require purchases of any water supply or power to repay the Federal Government the full cost of providing such power or water, including interest on that cost at a rate the government paid to borrow long-term money in the year it built the project. This specific pricing mandate was established by the Water Supply Act of 1958.

Since 1976, the Secretary of Army has required construction costs escalated to present day levels by use of the Engineering News Record Construction Index effective at the beginning of the fiscal year in which the contract is approved plus interest.

The Red River Valley Association requests Congress clarify the Secretary of Army's authority regarding water storage contracts and supports the concept of repayment to the Federal Government of original cost of construction plus interest only.

REGULATING LAND USE

In the past, proposals have been offered in the U. S. Congress and in some state legislatures to regulate and control the use of privately owned lands without compensation to the owner. These "land use" bills have been recognized by these legislative branches of government as contrary to the Fifth Amendment of the Constitution of the United States and soundly defeated each time they were offered. The Red River Valley Association opposes this type of national land use legislation.

MITIGATION LANDS

The present interpretation held by the U. S. Fish and Wildlife Service in relation to "mitigation lands" for water conservation projects greatly hinders the development of water supplies, flood control and bank stabilization projects. This interpretation requires taking large amounts of lands out of private

ownership for wildlife management purposes. This reduction in private land ownership represents a considerable economic and tax base loss. The Red River Valley Association, recognizing the need for a balance between the environmental aspects and people's needs, requests Congress to press for a revision of the present interpretation held by the U. S. Fish and Wildlife Service in order to make it compatible with Congressional intent and the needs of the people.

The Fish and Wildlife Service has undertaken efforts to utilize various alternative action programs such as fee acquisition, leasing, and easements for the purpose of a program to preserve bottom land habitats.

As part of this program, the Fish and Wildlife Service has identified specific bottom land hardwood areas in Texas and Oklahoma and has placed these areas into priority categories, with many of the areas so indentified in direct conflict with identified and proposed water supply reservoir sites.

The Fish and Wildlife Service's Program could have serious adverse effects on the ability of water supply agencies to meet the future water needs of the people within their respective regional water supply areas, in that the program sets a dangerous precedent that will permit anti-water development groups to use such tactics to preempt, or at least make very difficult, future water development projects. The Red River Valley Association, therefore, opposes the Fish and Wildlife Services' Bottom Land Hardwood Preservation Program.

SMALL WATERSHED PROGRAM

The Red River Valley Association has long recognized the value of the Small Watershed Program (Public Law 566) for protecting and improving the soil and water resources of our nation. Resource improvement projects in small watersheds of less than 250,000 acres, as provided in Public Law 566, gives rural and small town America an effective tool to span the gap between large watershed resources improvement projects of the Corps of Engineers and small, individual projects, carried out by landowners and operators. Public Law 566 has become a well-known and respected program of federal, state and local partnership in resource improvement and protection of the Red River Valley. The Red River Valley Association supports the Small Watershed Program and urges its effectiveness be increased through appropriate increases in funding and personnel.

FEDERAL RESERVOIRS POLICY

Federal reservoirs represent a combination of large economic investments and commitments of valuable natural resources which can make great contributions to the nation's economy. The Water Supply Act of 1958 provides a policy for non-Federal payment of water supply costs at federal reservoirs, both for participants at the time of project construction and for those who purchase reallocated storage at a later time. The payment required has been based on a simple principle: new water supply participants should pay for reallocated water supplies as they would have paid if they had been water supply participants

when the project was built. This historic policy has achieved two goals: it has prevented "free riders" from receiving water supply benefits that they did not pay for, and it has facilitated reallocation of water to purposes with higher economic benefits.

In recent years, the Federal government has developed a new policy for payment of reallocated water supplies, charging the highest of the following: benefits or revenues foregone, replacement costs, or updated cost of storage in the Federal project. Under this new policy, the federal government has in several cases sought repayment of "updated costs" of storage among the new mix of project purposes. Non-Federal participants are asked to pay an inflated cost, increased to reflect present cost levels instead of original cost of construction, plus interest at the rate in effect at the time of reallocation, as opposed to the interest rate at the time of the project's construction. This new federal policy has been established by agency initiatives, rather than by Congressional action, and has not been applied consistently across the nation.

The Red River Valley Association requests Congress to enact legislation making it clear that the water supply repayment policy in the Water Supply Act of 1958 applies to reallocated water supply storage. The Red River Valley Association also requests that Congress further stipulate that in considering reallocation of storage space at federal reservoirs, federal agencies should strictly respect state water law and state water management responsibilities, and in all studies and decisions related to reallocation, federal agencies should be required to consult with all affected states and follow applicable state laws on water rights and water quality.

STATEMENT OF HARVEY BOLLINGER, MEMBER, BOARD OF DIRECTORS FROM OKLAHOMA, RED RIVER VALLEY ASSOCIATION

Mr. BOLLINGER. Thank you.

I appreciate your working with us, and the way the committee has worked with us in the past year.

I simply want to touch on four projects that kind of involve Oklahoma. We feel that it is a pretty modest request frankly for water projects in Oklahoma. We are asking that the committee consider $100,000 for the Corps of Engineers to finish in January 1989 the Red River comprehensive study that involves the Oklahoma area.

We are also asking that $5.9 million be provided to the Bureau of Reclamation to again finish this next year the construction of McGee Creek Dam, and that $167,000 for the Bureau of Reclamation be provided to again finish a study of the southeast Oklahoma water supply that they are doing, scheduled again for January 1989.

This modest request will finish these studies. It will finalize them and we will be able to have the full benefit of the previous investments we have made.

We also have a request for $250,000 for the Corps of Engineers to reanalyze Denison Dam, to reconsider upstream solutions to the increasing competition between the various users and the authorized purposes of this important water resource.

We thank you again for all the work and help that you have been to us in the past years and look forward to a good future.

Thank you.

STATEMENT OF ROBERT MANSELL, VICE PRESIDENT FROM TEXAS, RED RIVER VALLEY ASSOCIATION

General HARRIS. Our next speaker is Mr. Robert Mansell.

Mr. MANSELL. Thank you, Mr. Chairman.

We really appreciate the time that you have given us today. We know that your schedule is quite busy so I will make my remarks very brief.

First, with the continued work going on to move forward with locks 3, 4, and 5, we are very concerned that there is proposal now to deauthorize the navigation feature from Shreveport to Dangerfield.

It just seems not to make sense that one water is watering the tree and the tree is growing, now we are looking at cutting one of the limbs without really doing any economic analysis of whether or not it is a good or a bad decision. It is simply a decision that appears to be being made.

We would, therefore, request that $100,000 be appropriated to continue to study the feasibility of the navigation feature between Shreveport and Dangerfield. We simply ask that it really be looked at to see if it is a good component of the project or a bad component. It should not be deauthorized without getting a fair shake.

LAKE WICHITA, HOLLIDAY CREEK, TEX.

I have three other requests. One deal with the Holliday Creek in Wichita Falls. That project creates some flooding problems in Wichita Falls. We support the Corps request for $7.5 million to address flooding at Holliday Creek in Wichita Falls, Tex.

COOPER LAKE, TEX.

I also would like to speak in favor of the appropriation for Cooper Lake and channels in the amount of $25,800,000. Cooper Lake has been delayed by litigation for years. The Corps is now moving forward to construct Cooper Lake. The local sponsors, my employer is one, are moving forward to construct at local cost some $60 million worth of water pipeline, pump stations, and transmission lines. So we find that it is really important to get Cooper built in a timely manner.

RED RIVER CHLORIDE CONTROL PROJECT

My final request is for no money, but it is something that I think that we are going to be back for next year. Right now the Corps is studying the feasibility of implementing the Red River chloride control project. The goal of cleaning up the Red River of salt pollution has been expressed by this association for years. We are very confident that the objective study now being done will show that the project is feasible and should be accomplished. So while we are not going to be asking for any money this year, we are real confident that in 1990 fiscal year we may be asking for some construction fund money.

Those are my remarks today, Senator Johnston, and again we do appreciate the time.

[The statement follows:]

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION—TEXAS

Mr. Chairman and Committee Members:

My name is Robert B. Mansell. I am Vice President - Texas of the Red River Valley Association. I am employed as Assistant to the General Manager of the North Texas Municipal Water District. I would first wish to express support for continued and timely funding of the Red River Navigation Project. Further the RRVA is concerned possible implementation of Section 1001 of Public Law 99-662 dealing with deauthorization will result in the Red River Navigation Project being constructed at less than optimum size without proper evaluation of the economic impact of such action. Specifically, the RRVA requests $100,000 be appropriated to determine the feasibility of the portion of the project referred to a Shreveport, Louisiana to Dangerfield, Texas now being defined as a separable element of the project and being targeted for deauthorization despite local project support and without any review of project benefits.

The RRVA requests support for continued funding of flood control work needed to protect lives and property in Wichita Falls, Texas. The project referred to as Lake Wichita Holliday Creek and McGrath Creek should receive continued funding at a level not less than $7,500,000.

The RRVA supports an appropriation of $25,800,000 for the Cooper Lake and Channels Project - Texas. My employer is a local sponsor of the project. After 14 years of delay caused by litigation construction is now proceeding. Local interests have spent many dollars on interim sources of water that would not have been needed had the project been completed in a timely manner. The RRVA urges adequate funding be provided to allow timely construction of the project and acquisition of mitigation land as provided in the S.E.I.S. It should be noted local interests will be spending some $60,000,000 of local funds to develop the pump station and pipeline necessary to utilize Cooper. Local facilities will be in place to take the water as soon as it is available.

While there is no request for construction funding in FY 1989 the RRVA does express its continued support for the Red River Chloride Control Project. The project is being reviewed for economic effectiveness subject to Section 1107 of PL 99-662. The RRVA is confident any objective study will illustrate the benefits of reducing chloride pollution of water flowing through four states. Construction funding requests from project supporters may be forthcoming in FY 1990.

Thank you for providing this time to testify before the Committee.

Your continued support is appreciated.

STATEMENT OF THE TEXAS WATER DEVELOPMENT BOARD

The Texas Water Development Board respectfully submits project testimony regarding Corps of Engineers projects located in the Red and Sulphur River Basins and Cypress Creek Basin of the State of Texas.

Responsibility for statewide planning and development of water resources rests with the Texas Water Development Board. The Board also provides financial assistance to eligible political subdivisions of the State for the planning and construction of water, wastewater treatment, and flood-control projects. The Board has been designated as the State agency to cooperate with appropriate agencies of the Federal government and with other State and local agencies in matters relating to water resource development. In order to assure orderly development of the State's water resources, the Board has formulated and adopted a comprehensive Statewide "Texas Water Plan", which under Texas statutes serves as a flexible guide for present and future water development in Texas.

The plan indicates the need for specific projects, including alternatives, to meet the State's water needs and to provide National, State, and regional economic growth and stability. The Water Development Board maintains a continuing planning program in order to address changing economic, social, hydrologic, and environmental conditions in the State. The projects included in this statement are considered as integral elements in the State's present and future water resource development program.

RED RIVER BASIN CHLORIDE CONTROL PROJECT

The Red River Basin Chloride Control project, directed toward the improvement and preservation of water quality in the States of Texas, Oklahoma, Louisiana, and Arkansas, is imperative in order to realize full utilization of these surface-water supplies. Presently, more than 1,000 miles of streams in the river basin are severely contaminated by natural brines. Consequently, waters of the streams are not suitable for municipal and most industrial and agricultural purposes. Large volumes of salt enter the streams from 15 natural sources, 10 of which are located in Texas. There exists an immediate need for good quality water within and to the west of the areas of natural salt pollution, as well as a long-term need downstream in the eastern part of the Red River Basin.

Passage of the 1966 and 1970 Flood Control Acts (P.L. 89-789 and P.L. 91-611) authorized construction of measures to control the natural salt pollution from Areas VI, VII, VIII, IX, X, XIII, XIV, and XV in the basin, subject to the provision that construction on the project could not be started until approved by the Secretary of the Army. Initiation of construction at Area VIII on the Wichita River, prior to the required approval by the Secretary of the Army, was authorized by the 1974 Water Resources Act. Construction at Area VIII, which includes the Truscott Brine Lake, was begun in February 1977 and is nearing completion. The Bateman Pump Station, pipeline, and Truscott Lake were put into operation in May of 1987. With the exception of Area VIII, construction at the remaining seven areas and two brine lakes of the Red River Chloride Control project is awaiting approval by the Secretary. It is our understanding the Secretary has delayed approval pending a commitment of up-front financing from the states involved in the overall project.

Congress authorized construction of the entire Red River Chloride Control project to control natural brine sources as a 100 percent federal project (P.L. 89-789 and P.L. 91-611). Subsequently, the components of the overall project were re-evaluated by the Corps of Engineers, at the request of Congress, and the results of the re-evaluation have been reported in the Corps' "Supplemental Data to Arkansas-Red Basin Chloride Control, Red River Basin Design Memorandum No. 25, General Design, Phase I-Plan Formulation", Vols. I and II, Department of the Army, Tulsa District Corps of Engineers, Oklahoma, November 1980. The re-evaluation reaffirmed both the economic and technical

feasibility of this project. Subsequently, as authorized by P.L. 99-662, a panel has been formed to assess the improvement in water quality downstream of Area VIII to determine its consistency with the water quality estimated in the development of project benefits. The results will be submitted to the Secretary and the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives by May 1990. We strongly urge that upon receipt of a favorable report, Congress request the Secretary of the Army to forward the project report and his recommendation on this project to the Office of Management and Budget, and to Congress, in accordance with the provisions of the project's authorizing legislation, as amended (PL 99-662). Accordingly, we request the Committee appropriate funding to initiate construction on the remaining seven areas at full Federal expense.

LAKE WICHITA, HOLLIDAY CREEK

Lake Wichita was constructed on Holliday Creek by the City of Wichita Falls, Texas, in 1901. The dam and spillway, which provides partial flood protection for highly developed urban areas of the City of Wichita Falls, has deteriorated badly and the spillway capacity is inadequate to handle floods which occur in the Holliday Creek watershed. Further, the dam has been assigned a high hazard classification by the Corps under the National Dam Safety Program and has been declared unsafe by both the Corps and the State of Texas. In response to Congressional resolution and studies authorized by the Chief of Engineers, the Corps has completed studies and has recommended a plan to meet the flood control needs of the area which includes replacement of the existing Lake Wichita Dam and enlargement of the channel downstream of the dam. The City of Wichita Falls strongly supports the project and will assume all non-federal responsibilities.

The President's budget recommends $7,500,000 be provided to continue construction of the Lake Wichita-Holliday Creek project during FY 89. The Texas Water Development Board strongly supports authorization of the project and appropriation of funds to the full extent of the President's budget for FY 89.

MCGRATH CREEK, WICHITA FALLS, TEXAS

As a result of severe flooding in May 1982, the City of Wichita Falls requested a study to determine the feasibility of improvements for flood damage reduction on McGrath Creek, a tributary of Holliday Creek in Wichita Falls. A reconnaissance report was completed under the Continuing Authorities Program, Small Flood Control Projects (Section 205, Flood Control Act of 1948, as amended). Feasibility studies were completed as part of the continuation of planning and engineering for Lake Wichita-Holliday Creek and a feasibility report has been forwarded to the State of Texas for review prior to submittal to the Secretary. The City of Wichita Falls strongly supports the project and will assume all non-federal responsibilities.

The Board strongly encourages the Congress to authorize construction of this project under Section 201 of P.L. 89-298, as amended, and to appropriate sufficient funds to initiate preconstruction engineering and design studies in FY 89.

DENISON DAM - LAKE TEXOMA, OKLAHOMA AND TEXAS

A restudy of the Denison Dam - Lake Texoma project is being conducted to investigate alternatives for satisfying the future needs of the area with respect to flood control, hydroelectric power, recreation, water supply, navigation, irrigation, and other purposes.

In March 1987, a draft report and environmental impact statement (EIS) was distributed for review. The report recommended no modifications to the existing project that would require new Congressional authority. The EIS

documented the potential impacts of a project to add power generating units at Denison Dam. The report recognizes that the addition of three power generating units was authorized by the original project authorization and that there is significant non-Federal interest in financing the addition of units. However, under current Federal criteria, the addition of units is not economically justified. The report projects that needs for municipal and industrial water supply in the area will continue to increase, but are expected to be met through the year 2030 under authority to reallocate hydropower storage to water supply provided in the Water Resources Development Act of 1986 (P.L. 99-662). The report also recognized the designation of recreation as a project purpose as provided in P.L. 99-662, but noted that no storage is allocated to recreation and that operation of the lake will not change as a result of the designation.

Subsequent to review, the restudy was expanded to consider additional alternatives for improving management of the water resources of the Red River Basin at and above Denison Dam. The expanded study will include consideration of the feasibility of new reservoirs upstream of Lake Texoma and electrical interconnections between the Southwest Power Pool and the Electric Reliability Council of Texas.

The Board supports this study and urges the appropriation of $250,000 to continue the study through FY 89.

COOPER LAKE AND CHANNELS, TEXAS

The Cooper Lake and Channels Project, located in the Sulphur River Basin upstream of Lake Wright Patman in the State of Texas, was authorized by Public Law 218 of the 84th Congress. In addition to providing 273,000 acre-feet of water conservation storage space, the reservoir will allow sufficient storage for basin-wide flood protection to convert 120,000 acre-feet of flood control space in Lake Wright Patman into water supply storage for the Texarkana water demand area.

The Water Development Board appreciates the consideration the Committee has allowed the project in the past. Cooper Lake and Channels has been subjected to lengthy delays, due in large part in recent years to litigation under the National Environmental Policy Act and subsequent alleged inadequacies in the Environmental Impact Statement. That litigation has now been resolved. Completion of Cooper Lake is essential to meet existing and future water needs of the Sulphur River Municipal Water District, City of Irving, Texas, and the North Texas Municipal Water District. The North Texas Municipal Water District membership includes 11 cities in the rapidly-expanding urban area of more than 530,000 residents in a 1,600 square-mile area to the north and east of Dallas. The District serves 44 other entities, including 17 customer cities, rural water supply corporations, and municipal utility districts in the region. The District faces serious, short-term water supply problems unless construction of Cooper Lake is completed, since its total water supply is currently provided by one reservoir - Lake Lavon. This is considered one of the most critical water-supply problems in Texas.

This project is one of the most urgently-needed water resource projects in Texas. The Board strongly urges the Committee to appropriate the $21,800,000 requested in the President's budget for FY 89 to continue construction of Cooper Lake.

RED RIVER WATERWAY PROJECT

The Rivers and Harbors Act of 1968 authorized the Red River Waterway Project featuring a navigation channel from the Mississippi River to Shreveport, Louisiana, and Daingerfield, Texas, and stabilization of the banks of the Red River from the Mississippi River to Shreveport, Louisiana; Shreveport, Louisiana to Daingerfield, Texas; Shreveport, Louisiana to Index, Arkansas, and vicinity of Index, Arkansas to Denison Dam, Texas. Construction under this authorization has been initiated in the Mississippi River to Shreveport, Louisiana reach.

Completion of the Red River Waterway will significantly boost the economy throughout the river basin and reduce widespread unemployment of the area. Therefore, the Board supports the resumption of preconstruction planning of the waterway segment from Shreveport, Louisiana to Daingerfield, Texas and urges the Committee appropriate $100,000 for this purpose in FY 89.

OPERATION AND MAINTENANCE
OF EXISTING PROJECTS

The Board supports appropriations to the Corps of Engineers for operation and maintenance of the following projects during FY 89. Arkansas-Red River Basin Chloride Control, Area VIII ($1,014,000); Denison Dam, Lake Texoma ($3,687,000); Ferrells Bridge Dam-Lake O'the Pines ($1,793,000); Lake Kemp ($153,000); Pat Mayse Lake ($837,000); and Wright Patman Lake ($1,790,000).

CONCLUDING COMMENTS

The Texas Water Development Board requests Committee support of the Red and Sulphur River Basins and Cypress Creek Basin water resource development efforts. The Board most respectfully urges the appropriation of funds as requested in order to accomplish the coordinated, orderly development of vitally-needed water resource projects in the Red and Sulphur River Basins and the Cypress Creek Basin in the State of Texas.

RED RIVER EMERGENCY BANK PROTECTION, ARK.

STATEMENT OF JOHN STROUD, MEMBER OF BOARD OF DIRECTORS, RED RIVER VALLEY ASSOCIATION

General HARRIS. Our next witness will be Mr. John Stroud from the state of Arkansas.

Mr. STROUD. Mr. Chairman, it is a pleasure to be with you again. I will just mention two projects, although seven are set forth in our testimony.

We have been here for a number of years seeking funding of emergency bank protection along the Red River. Frankly, in the last several years that is the source of the funds for bank stabilization work in Arkansas as well as three realignments.

There are two realignments remaining in Arkansas that need to be accomplished, and the Corps has indicated, I think, a very good example of fiscal restraint.

We have typically asked from $6 to $15 million. They say that $4.2 million, if there is language included to allow continuing contract where all of the money is not required to be in hand the day they let the bid, they can do a better job and they can accomplish these two realignments and one cutoff of one revetment project that is beside it at the same time, although it would run at least 2 years of construction. We ask for a smaller number, but, very importantly, we ask you to include this language of the funds to remain available and continuing contract language.

RED RIVER WATERWAY, SHREVEPORT, LA., TO INDEX, ARK.

The other thing I would like to mention, we have said on a number of occasions that we look forward some day to navigation above Shreveport and into the state of Arkansas. We have waited until we felt the time was ripe.

We are told by the Corps of Engineers and other indications, hopefully with navigation to Shreveport in 1994, that now is the time to begin a feasibility study, and that, obviously, will take some time. But due to the development of the river, due to the growth of industries that would use the navigation feature, we are confident of the result of that study.

We are further told that it doesn't need any new, separate vehicle, except some language in this comprehensive basin study that is looking at the river and has been for several years from hydropower and the whole thing. But just some language directing that Shreveport to Index be studied for feasibility and reported back.

I have heard the chairman on numerous occasions express his support and that we won't quit when we get to Shreveport. We appreciate it more than we can ever tell you.

Thank you.

[The statement follows:]

STATEMENT OF THE RED RIVER COMMISSION OF ARKANSAS

As attorney for the Red River Commission of Arkansas, I wish to thank the members of this committee for the opportunity to again express the concerns, needs and priorities of funding vitally needed from the Congress to continue the orderly development of the Red River Valley in Southwest Arkansas.

Twenty-one years ago, the bank caving in Southwest Arkansas accelerated to such an extent that the levee boards in that area banned together to form an association to present testimony to the Congress with a united voice. At that time, some of the upstream dams in Arkansas and Oklahoma had been completed which substantially alleviated the threat of floods, but which rapidly accelerated the bank caving due to the river remaining at one-half to two-thirds bank full for long periods of time. Since that time upstream dams known as Millwood, Gillham, Dierks and DeQueen have been completed which have further reduced the threat of flooding, but which have accelerated the bank caving even more.

The State of Arkansas became concerned at this rapid irreparable loss of the most fertile farm land in Southwest Arkansas and fifteen years ago created the Red River Commission upon the recommendation of then Governor, and now Senator Dale Bumpers. The Commission was vested with the authority to furnish the local cooperation necessary for the construction and study of projects and to coordinate with the Corps of Engineers and the Congress to develop the water resources of the Red River in Arkansas. Southwest Arkansas is fortunate to have an abundance of water, rich soil and timber resources, but we vitally need the assistance of Congress to continue the bank stabilization projects for the preservation of these natural resources, and to initiate a feasibility study of the extension of navigation from Shreveport, Louisiana to Index, Arkansas.

RED RIVER EMERGENCY BANK PROTECTION (LOUISIANA, OKLAHOMA, ARKANSAS AND TEXAS)

It is imperative that this program continue to be funded to provide bank stabilization works in those portions of the river where the caving is most critical and where stabilization works were not included in earlier authorizations. At many of these locations the river threatens vital flood control facilities and endangers valuable public facilities such as highways, pipelines and bridges.

The last two realignment projects in Arkansas to be known as Brown and Bear Realignments should be initiated to stop the loss of valuable farmland and to stop the transfer of large quantities of sediment to the navigation system downstream. These reaches of the river have been identified as having the most severe bank caving. Funding of the Emergency Bank Protection Program will continue to allow these vital improvements to be accomplished in the areas most critical during the completion of planning still required before a comprehensive bank stabilization program can begin to be constructed.

Continued neglect of these caving banks will substantially worsen alignment of the river, making future realignment for navigation and stabilization more costly and difficult. Many caving banks still have an existing alignment that is usable for the navigation channel when it is authorized, and those banks should be preserved now.

We urge your inclusion of funding of the Emergency Bank Protection program in the amount of $4,300,000 for fiscal year 1989 to remain available until expended. We also ask that you direct the Secretary of the Army to initiate continuing contracts in Fiscal Year 1989 for construction of Bear and Brown Realignments and Slay Bend Revetment with none of these contracts to be considered fully funded but to be contracts initiated with funds appropriated for fiscal year 1989.

RED RIVER BELOW DENISON DAM, COMPREHENSIVE BASIN STUDY

We think the administration displayed sound judgment when it included initial funding for a comprehensive study of the entire Red River basin during fiscal year 1984 to include flood control, water supply development, generation of hydro-electric power, development and enhancement of recreational potentials and improvement of the river for navigation and port-site development. The study of hydro-electric power in conjunction with navigation on the Red River will undoubtedly prove of economical benefit if timely studied. We, therefore, urge your approval of the full Corps capability for fiscal year 1989 to continue this

comprehensive study, and to specifically include the initiation of a study of the feasibility of navigation from Shreveport, Louisiana to Index, Arkansas and to all points between.

RED RIVER WATERWAY PROJECT, SHREVEPORT, LOUISIANA, TO INDEX, ARKANSAS

The Congress has funded preconstruction planning for this comprehensive bank stabilization program for several years for the reach of the river from Shreveport, Louisiana upstream to the Arkansas-Texas boundary at Index, Arkansas. Although much needed stabilization work in certain areas has been performed with funding by the Emergency Bank Protection and Red River Below Denison Dam projects, only through the completion of preconstruction planning and then construction of this comprehensive bank stabilization program can the loss of valuable farm land be ended.

Tens of thousands of dollars have been contributed by the four counties bordering the Red River in Arkansas and by the towns and communities within those counties and over five and one-half million dollars has been placed in the Red River Waterway Trust Fund by the Arkansas General Assembly to meet the non-federal costs required upon construction of this project. The Red River Commission is continuing its efforts to have the non-federal costs in hand when the preconstruction planning is completed so that construction can begin in an orderly manner without great delay.

Not only will this project end the loss of some of the nation's most valuable resources but substantial benefits will accrue to the navigation project downstream which is presently under construction. The farm land is now washed downstream only to form worthless sand bars and place tremendous amounts of silt in the channel, both to the detriment of navigation. We, therefore, request an appropriation of $50,000 during fiscal year 1989 to continue preconstruction planning of this comprehensive bank stabilization program.

RED RIVER LEVEES AND BANK STABILIZATION BELOW DENISON DAM

For the past several years no appropriations have been included for projects to be constructed under Red River Levees and Bank Stabilization Below Denison Dam, but it remains an authorzied program to meet special needs. A special need exists for the replacement of a completely failed flood control gate and the levee contiguous to it in the McKinney Bayou Drainage Ditch in Miller County, Arkansas. The gate was constructed to control high stages in McKinney Bayou caused by head-water flows and or back-water conditions resulting from high stages on the Red River. Either of these conditions can cause serious flooding of valuable farmland above the failed flood control gate.

The lack of an operable flood gate on McKinney Bayou negates the entire lower McKinney Bayou Protection system which endangers 30,000 acres of farmland with improvements located on them. We urge you to fund $250,000 to initiate design of a new drainage structure to replace the failed McKinney Bayou Drainage Structure which is a feature of the Red River Levees and Bank Stabilization Below Denison Dam Project. We ask you to direct the Secretary of the Army to initiate the design of a replacement structure in Fiscal Year 1989, and to complete the design and construction in subsequent years on a schedule to be determined by the Chief of Engineers.

RESHAPING LEVEES ON RED RIVER IN ARKANSAS

The Corps of Engineers has completed a study indicating that the levees along the main stem of the Red River in Arkansas should be reshaped to conform to the new flow line resulting from the study. The reshaping of the levees will allow a more gentle slope on both sides of the levee to increase their integrity and substantially reduce maintenance costs. The Arkansas Red River Commission urges that Congress appropriate the sum of $500,000 to initiate pre-construction planning of this project.

RED RIVER BANK STABILIZATION, INDEX, ARKANSAS TO DENSION DAM

Bank caving is not only a serious problem between Shreveport, Louisiana and Index, Arkansas, but it continues upstream between Index, Arkansas and Denison Dam, Texas. The Congress saw fit to initiate preconstruction planning for a comprehensive bank stabilization project in that reach of the river during fiscal year 1984, but it has not been funded for continued study since that year. We urge the reinstatement of this preconstruction planning project recognizing that many years of

planning are required before construction of this type project can begin. We hope that an orderly development up Red River can continue in the years ahead for the benefit of the people of all four states bordering the Red River. We, therefore, urge you to appropriate the sum of $350,000 to resume this preconstruction planning program during fiscal year 1989.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

It is a pleasure for the Red River Commission of Arkansas to join with the State of Louisiana to seek funding for the prompt construction and completion of Locks and Dams No. 4 and No. 5. We are well aware of the economic impact that will occur not only to Louisiana, but certainly to Southwest Arkansas when the navigable channel reaches the port of Shreveport, Louisiana. We, therefore, urge your approval of an appropriate sum for fiscal year 1989 for this project.

STATEMENT IN BEHALF OF RED RIVER VALLEY INTERESTS IN ARKANSAS MADE BY JOHN F. STROUD, JR., ON APRIL 12, 1988 AT 2:00 P.M. TO ENERGY AND WATER DEVELOPMENT SUB-COMMITTEE ON APPROPRIATIONS, SENATOR J. BENNETT JOHNSTON, CHAIRMAN

1. Red River Emergency Bank Protection (Louisiana, Oklahoma, Arkansas and Texas);
   Funds requested for FY-89 $4,200,000

2. Red River Below Denison Dam, Comprehensive Basin Study (Arkansas, Louisiana, Oklahoma and Texas) for continuation of planning
   Funds requested for FY-89 Full Corps Capability

3. Red River Waterway, Shreveport, Louisiana to Index, Arkansas - for continuation of preconstruction planning;
   Funds requested for FY-89 $50,000

4. Red River Levees and Bank Stabilization Below Denison Dam (Texas, Arkansas and Louisiana) for construction of flood gate;
   Funds requested for FY-89 $250,000

5. Reshaping levees on Red River in Arkansas - for construction or preconstruction planning;
   Funds requested for FY-89 $500,000

6. Red River Bank Stabilization, Index, Arkansas to Denison Dam, Texas (Arkansas, Oklahoma and Texas) for resumption of preconstruction planning;
   Funds requested for FY-89 $350,000

7. Red River Waterway, Mississippi River to Shreveport, Louisiana - to continue construction;
   Our request - funds sufficient for a prompt start of Lock and Dams No. 4 and 5.

STATEMENT OF HARRY FRIEDMAN, COMMISSIONER, RED RIVER VALLEY ASSOCIATION

General HARRIS. Thank you, John.

The next witness is Mr. Harry Friedman speaking for the State of Louisiana.

Mr. FRIEDMAN. I am Harry Friedman with the Red River Waterway Commission of Louisiana.

We want to thank the subcommittee, and other Members of the Senate, and, of course, our two able Senators from Louisiana for the assistance that we have received. We would also like to thank the administration.

I can assure you that the Red River Waterway Commission is dedicated to do whatever is necessary on its part to make certain that the acquisition and whatever we are supposed to do will be done to make the Red River navigable to Shreveport by 1994.

We will also support the recreational aspects and work with the Corps of Engineers for recreation and hydropower if and where it is feasible.

I might point out that everyone knows the long-term benefits of navigation, but I think that we are receiving some tremendous short-term benefits right now in our depressed area through the employment and the money that is being spent on the Red River. The lock and dam, the contract was let last month for lock and dam 3, and there are long lines and applications, just stacks of applications for the jobs that will be available even in this initial phase of lock and dam 3. So there is definitely a benefit taking place in the short term.

I will add that we certainly support the position of the Red River Valley Association. We will continue to support that position to help our neighbors from Arkansas, Texas, and Oklahoma to continue this project once it reaches Shreveport.

Thank you very much.

[The statement follows:]

STATEMENT OF THE RED RIVER WATERWAY COMMISSION OF LOUISIANA

Honorable Ladies and Gentlemen of the Committee, as a senior member of the Louisiana Red River Waterway Commission, I can assure you of the value and potential of the Red River Waterway Project to Louisiana and its citizens.

The Red River Waterway Commission has accepted the challenge of completing the Red River Waterway by 1994. I am here to pledge on behalf of myself and the other members of the Commission our intention to do our part in seeing that this far sighted goal is accomplished.

We also wish to thank you, the members of the Appropriations Subcommittees, as well as all of the members of Congress, and especially the Louisiana Delegation, for your support and leadership in having the Waterway Project funded at the appropriate levels despite the current economic conditions. This year, we are pleased that the President is proposing a $118,000,000 allocation for the Red River Waterway Project. We support the President's proposed allocation.

I would like to point out to the members of this Subcommittee that the Red River Waterway Commission has been very active in the pursuit of this project. We are very proud of our aggressive recreational development program, our agreement in principal to provide up-front financing for hydropower development, and our activity in the development of ports along the Red. We are doing this in a manner that is supportive of the Administration's goal and of Congress's goal to reduce the national deficit. We believe that the proposed allocation is compatible with the goal.

We also wish to be recorded as in support of the basin-wide request made by the Red River Valley Association on behalf of the other states in this basin, because all of these projects are interrelated. What happens to the river upstream affects us in Louisiana, and what we do to the river down here affects our members in the upstream states. This is the reason the Red River Valley Association has existed all these decades.

In closing, let me again thank you for giving me the opportunity to appear before you and express our views.

STATEMENT OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT OFFICE OF PUBLIC WORKS

The Louisiana Department of Transportation and Development, Office of Public Works is the agency designated to represent the State of Louisiana for the coordinated planning and development of water resources including flood control, navigation, drainage, water conservation, and irrigation projects. Therefore, this statement is presented on behalf of the State of Louisiana. We are pleased to present the following endorsements and recommendations for Fiscal Year 1988 appropriations for Louisiana projects in the Red River Basin.

RECOMMENDED APPROPRIATIONS FOR RED RIVER BASIN PROJECTS FISCAL YEAR 1989

LOUISIANA PROJECTS	BUDGET ALLOWANCE	AND	LOUISIANA REQUEST
Construction			
Red River Emergency Bank Protection		$ -0-	
Red River Levees & Bank Stabilization Below Denison Dam		-0-	
Red River Waterway, Mississippi River to Shreveport	118,000,000		118,000,000
Aloha-Rigolette Area Red River, LA		-0-	
Planning			
Red River Basin, Arkansas and Louisiana Comprehensive Study	450,000		450,000

Operation and Maintenance	Estimated Obligation and	Louisiana Request
Bayou Bodcau Reservoir	$ 533,000	
Bayou Pierre	40,000	
Caddo Lake	110,000	
Red River Waterway, Mississippi River to Shreveport	5,256,000	
Wallace Lake	150,000	

NOTE: The projects listed above are only in Louisiana and directly affecting the State. We realize that there are others outside of Louisiana that are vitally important to the Basin and we endorse the recommendations of the Red River Valley Association.

RED RIVER EMERGENCY BANK PROTECTION
(Budget: $-0-) (Request: See Commentary Below)

RED RIVER LEVEES & BANK STABILIZATION BELOW DENISON DAM
(Budget: $-0-) (Request: See Commentary Below)

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT
(Budget: $118,000,000) (Request: $118,000,000)

The above three (3) projects comprise the only mechanism for controlling the last major river basin in the United States remaining to be developed. Both the Red River Waterway Project and the Red River Emergency Bank Protection Project were authorized by the River and Harbor Act of 1968; Red River Waterway Project basically for navigation and the Red River Emergency Bank Protection

basically for bank stabilization. The Red River Levees and Bank Stabilization Below Denison Dam project is an older project and is the only comprehensive flood control program on the Red River.

Over the past few years, the administration has required the U.S. Army, Corps of Engineers to systematically phase out the first two (2) of these projects in the state of Louisiana, leaving only the Red River Waterway Project funded in the state. The Corps has complied. There was no money appropriated for these two (2) projects last year and there is none budgeted this year and no capability to use any is shown by the Corps of Engineers. This was done because it was thought that many of objectives of these two (2) projects would be accomplished by construction of the third, the Red River Waterway Project.

The State of Louisiana, its Office of Public Works, in particular, wishes to commend the Appropriations Sub-Committees on Energy and Water Development and express our appreciation for the foresight and understanding exhibited in the past of the need for authorizing adequate levels of appropriations for water resources projects which are vital to the national interest. We solicit your further consideration of the recommendations presented herein.

CONSTRUCTION SCHEDULE FOR LOCKS AND DAM NOS. 4 AND 5

General HARRIS. Senator, we have abbreviated this. I will ask you just two questions. When can we start lock and dam 4 and 5?

Senator JOHNSTON. We have, as you know, the language in the appropriations bill to require the simultaneous design, and that was a very big thing, as you know, standing in the way of expeditious finishing of the entire project—important because the initial plan was to do it seriatum, finish one and then go to the next one. If they had gone on that basis, it would have been maybe the year 2000 before we would finish to Shreveport. This way we will finish the design by about 1990, and we can let both of those simultaneously, and with any luck at all, we ought to be to Shreveport by 1994.

General HARRIS. Great.

Senator JOHNSTON. I might add, we want to keep the authorization for Dangerfield, the law does require, of course, that you keep an authorization alive, and we expect to do that.

Now that we can see the light at the end of the tunnel, at least insofar as that light represents Shreveport, we don't want to say, "No, we are not going to go further." In the first place, we would already have made the big investment to get most of the way and those who have stuck together, we are going to stay together, and we are going to try to maximize the benefits of navigation by coming on up north of Shreveport.

General HARRIS. We eventually expect to go to Dangerfield, Texas, Arkansas, and then on in into Oklahoma. That is the overall plan and there hasn't been any changes from that.

Senator JOHNSTON. That is correct.

General HARRIS. The second question, how high did you say the price of oil was going? [General laughter.]

Senator JOHNSTON. As a matter of fact, if you look in the paper this morning, the price went up over a dollar a barrel yesterday. It is up around $18, which is the best news I have heard in a long time, and I know that the Governor of Louisiana is just dancing in the streets over that.

It really is a function of OPEC. It is a function of consumption and it is a function of production. Consumption in this country is going up, production is going down, and OPEC is trying to get its act together in controlling their own production. What the market was saying yesterday was that they have confidence that OPEC is going to restrict production.

It is not going to stop at $18, and I am not saying that tomorrow it is going to go up another $1.50, but I can tell you over the long term the price of oil is going up, and going way up, so that the savings you make from river transportation are going to be a whole lot more important tomorrow than they are today.

You are seeing probably a 10-year low right now in the price of petroleum. It is never going to be any lower than it is right now. In the next few months, it could go down a dollar or something just as a temporary aberration, but over the next 10 years, you are seeing oil at the lowest price it is going to be, and it is going to be a lot higher, consequently, river transportation is going to be a magnet for attracting industry and economic activity like we haven't seen all along that river.

I think that it is going to be the greatest bonanza that, with our highway, and we want to bring our 49 up to the north as well, and we are working on that. You may have seen the report that just came through yesterday on that, which was favorable.

We are committed to the Red River project. We have never been as confident on this project as we are today. Even the administration has gone along with our budget request for which we are greatly appreciative. We look forward to success.

I want to praise again the Red River Association—Don Duggan, and General Ed have done fantastic work, and the whole association has, all up and down that river valley. I have said that many times, but I think it needs repeating. It is your leadership that has made it possible for us to be successful up here in Washington. We are going to stay together as a team until that project is finished.

General HARRIS. Thank you, sir.

Senator JOHNSTON. Thank you very much.

General HARRIS. We also bring greetings from Barney Rothschild and Doug Atterway, two old stalwarts who have been here. They are just not able to travel any more, but they send their regards.

Senator JOHNSTON. Give them my best.

Mr. DUGGAN. Before we leave, I want to recognize all these people, along with General Harris, who have come in support.

Will you stand, please? [Large group standing.]

[Applause.]

Senator JOHNSTON. Thank you very much, General Harris.

Next it is my pleasure to welcome to the committee our old friend Herb Haar, Deputy Executive Port Director of the Port of New Orleans.

Welcome to the committee, Herb.

STATEMENT OF HERBERT R. HAAR, JR., DEPUTY EXECUTIVE DIRECTOR, PORT OF NEW ORLEANS

ACCOMPANIED BY CHANNING HAYDEN, VICE PRESIDENT, NEW ORLEANS STEAMSHIP ASSOCIATION

Mr. HAAR. Thank you very much, Mr. Chairman. It is indeed a pleasure to be here.

I have heard the admonitions on time and I am going to take heed. I would like to request, sir, that my full statement be included in the record.

Senator JOHNSTON. It is so ordered.

Mr. HAAR. I will just give you the summary page, because I know you are familiar with all the projects and you are going to support us as you always have. You have really been wonderful.

Also, Mr. Chairman, I have Channing Hayden with me, the vice president of the New Orleans Steamship Association, who has some brief remarks he would like to offer. Also, Capt. Jacques Michel, who would ordinarily come with us, is not here, but I do have his statement, and I have given it to the staff. I would like to request that it be included in the record, too.

Senator JOHNSTON. Without objection.

Mr. HAAR. Mr. Chairman, I am Herbert Haar, the deputy port director of the Port of New Orleans, and I am testifying on behalf of the board of commissioners of the port. The port is a unit of local government of Louisiana. We have an interest not only in the Port of New Orleans, but the deep water ports on the lower Mississippi River and seven projects.

The first is the Mississippi River Ship Channel, the Gulf to Baton Rouge, La., and we recommend that the Corps be funded to a minimum of $3.8 million for fiscal year 1989 to complete the project mitigation features of the first phase of the deepening project.

The second item we recommend is the Mississippi River, Baton Rouge to the gulf, maintenance dredging and stabilization. We urge that Congress appropriate at a minimum $54,707,000 under O&M general, an addition of $6,667,000 greater than the budget request. However, if greater capability exists, we urge that this amount be further increased to the extent that much of the unscheduled bank stabilization be undertaken in fiscal year 1989.

The third project is the Mississippi River-gulf outlet, Louisiana, maintenance dredging. We recommend that Congress authorize the full capability of $7,108,000, the same amount contained in the administration's fiscal year 1989 budget request.

The fourth project is the Mississippi River-gulf outlet, Louisiana, new ship lock. We recommend the $500,000 proposed for this lock to be provided for lock reevaluation studies and initiation of general design studies.

The fifth project is the Mississippi River outlets at Venice, La. We recommend approval of the administration's proposed $994,000, equal to the Corps capability for continued maintenance of these critical east-west navigational channels.

The sixth project is the Gulf Intracoastal Waterway, Louisiana and Texas section. We urge continuation of general investigation funding in the amount of $210,000 to determine the advisability of deepening and widening the project segment from New Orleans to Brownsville, Tex.

The final project is the one that has already been mentioned very strongly earlier this afternoon, we want to give our support to the Red River Waterway, Mississippi River to Shreveport, La., for the $18 million. The budget request is essential for continuing completion of this project.

We endorse all the goods that you and others before have said this afternoon because this project is going to be important not only to the area of Louisiana it lies in, but also to the rest of the state and to the nation, and in particular to the poor of New Orleans, because it is going to bring a lot more commerce for us to put into foreign trade. We enthusiastically support it.

Mr. Chairman, this completes my portion. I would like to ask, if I may, at this time, Channing Hayden, vice president of the New Orleans Steamship Association, to give you a few brief supporting remarks.

[The statements follow:]

STATEMENT OF THE BOARD OF COMMISSIONERS OF THE PORT OF NEW ORLEANS

Summary of testimony of the Board of Commissioners of the Port of New Orleans by Herbert R. Haar, Jr., Deputy Port Director, before the Senate Appropriations Subcommittee on Energy and Water Development on Tuesday, April 12, 1988, in reference to the following projects:

1. MISSISSIPPI RIVER SHIP CHANNEL, GULF TO BATON ROUGE, LA.
We recommend that the Corps be funded to a minimum of $3.8 million for Fiscal Year 1989 to complete the project mitigation features of the First Phase of the deepening project.

2. MISSISSIPPI RIVER, BATON ROUGE TO THE GULF, MAINTENANCE DREDGING, STABILIZATION
We urge that Congress appropriate as a minimum $54,707,000 under O & M General, an addition of $6,667,000 greater than the budget request. However, if greater capability exists, we urge that this amount be further increased to the extent that much of the unscheduled bank stabilization be undertaken in Fiscal Year 1989.

3. MISSISSIPPI RIVER-GULF OUTLET (MR-GO), LA, MAINTENANCE DREDGING
We recommend Congress to authorize the full capability of $7.108 million, the same amount as contained in the Administration's FY 89 budget request.

4. MISSISSIPPI RIVER-GULF OUTLET, LA., NEW SHIP LOCK
The $500,000 construction funds proposed for the New Ship Lock are essential to the completion of lock reevaluation studies and initiation of general design studies. This amount is certainly within the Corps' capability and we recommend approval.

5. MISSISSIPPI RIVER OUTLETS AT VENICE, LA.
We recommend approval of the Administration's proposed $994,000 equal to the Corps' capability for continued maintenance of these critical east-west navigational channels.

6. GULF INTRACOASTAL WATERWAY, LOUISIANA & TEXAS SECTION
We urge continuation of general investigation funding in the amount of $210,000 to determine the advisability of deepening and widening project segment from New Orleans to Brownsville, Texas.

7. RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA.
The $118 million in the budget request is essential for continuing the completion of this project -- ultimately to result in stimulating economic growth along the Red River Basin and increase cargo movements through the Port of New Orleans. We strongly recommend approval of this budget proposal.

I am Herbert R. Haar, Jr., Deputy Port Director of the Port of New Orleans. I am here to testify on behalf of the Board of Commissioners of the Port of New Orleans - a unit of local government of Louisiana - and on behalf of neighboring Gulf States, the Mid-America States and the Nation as a whole.

The year 1986 saw the passage of Public Law 99-662, the Water Resources Development Act of 1986. That long awaited development was and is heralded now by our country's port industry. The port industry anticipates that upon completion of the authorized deep draft harbor projects, we will be placed in a more competitive position with the import/export bulk ports of the world. That position of strength in trade is essential to our nation's very well-being when one considers that foreign trade has been, and continues to this day, a sustaining force behind our country's growth. Ninety-one percent of our foreign merchandise trade by volume - and two-thirds of it by value - moves in ships. With 16 percent of the nation's foreign waterborne commerce passing through the ports of Louisiana, the State of Louisiana has had a profound influence on employment, plant construction and access to worldwide markets.

We believe our Louisiana ports have a distinct advantage in access to foreign markets at competitive transportation costs. In order to handle the waterborne commerce, hundreds of barge lines serve our nation's inland waterways. In the Lower Mississippi River region, over 100,000 barges pass through the Port of New Orleans annually, handling the waterborne commerce of the area. To carry the cargo between New Orleans and its trading partners throughout the world -- serving, for example, more than 150 countries -- approximately 3,500 vessels operated by more than 100 steamship lines call at the port in a year's time. These trading partners and percentages of trade are Europe (35%), Latin America (27%), Asia (26%), and Africa (12%).

It is undeniable that the New Orleans area plays a vital role in the international commerce of this nation. In 1986, the lower Mississippi River (Baton Rouge to the Gulf of Mexico) handled 118 million tons of foreign waterborne commerce. Worth $20.4 billion, this cargo represented 15% of the nation's international waterborne trade. Bulk cargo accounted for 94% of this volume, primarily the result of tremendous grain and animal feed exports and petroleum imports. More specifically, over 2.4 billion bushels of grain coming from 17 states and representing 61.3% of all U. S. grain exports entered the world market via the ten grain elevators and midstream transfer capabilities on the lower Mississippi River. This same port complex received 14.3 million tons of crude petroleum in 1986, 9% of the U. S. waterborne imports of that commodity.

Also in 1986, the Port of New Orleans handled 39.6 million tons of foreign cargo worth $10.6 billion (included in lower Mississippi River statistics). Of this amount, general cargo tonnage totalled 6.8 million tons (major commodities: iron and steel products, rice, paper products, coffee and crude rubber). Although the volume of bulk cargo statistically dwarfs the amount of general cargo handled, the significance of the port in the movement of general cargo should not be overlooked. The Port of New Orleans consistently ranks in the top five general cargo ports in the country. Furthermore, per ton, general cargo is very valuable to the community as it produces a greater economic benefit than does bulk cargo.

While the port's foreign market is worldwide, its domestic market is primarily mid-America, the heartland of the United States. This heartland region currently produces 60% of the nation's agricultural products, 1/2 of all of its manufactured goods, and 90% of the country's machinery and transportation equipment. Waterborne commerce from this region is projected to reach 800 million tons by the year 2000.

Essential to our national economy is the continued growth and development of the lower Mississippi River regional complex. Most major trading nations of the world have deep draft ports and are in the process of developing more. With the passage of the Water Resources Development Act of 1986, United States ports are on the way to becoming more competitive in the world market place.

In June of 1986, the State of Louisiana signed a Local Cost-Sharing Agreement with the Assistant Secretary of the Army for Civil Works for the first increments of deepening the Mississippi River Ship Channel, Gulf to Baton Rouge, Louisiana. This phased construction scheduled over a two-year period will result in the completion of an initial 45-foot channel from the Gulf of Mexico to River Mile 181 Above the Head of Passes. In 1987 we saw the partial realization of a long awaited event - although not completed - the achievement of a minimum 45 foot navigation depth from the Gulf of Mexico to Mile 151 - a point

36 miles upstream from the Port of New Orleans along the waterway wherein eight of the ten active grain elevators are located that serve the vast mid-American, agricultural hinterland. A combination of events -- the deepening of the channel at the bar entrances and a cooperative Ole Man River -- allowed shippers to load more cargo on vessels during the latter half of 1987. It is reported that the extra cargo allowed additional earnings of $13.5 million for shippers in 1987. By the end of this fiscal year, the Corps will have completed the initial construction dredging to Mile 181 of the 45-foot channel from the Gulf of Mexico, thereby capturing the majority of estimated benefits attributed to the deeper channel. Remaining yet for total first phase completion of the project are the project mitigation features for which the Administration has proposed $3.8 million. We urge that the Corps be funded this amount in the Fiscal Year 1989 Construction, General, Appropriation.

The Port of New Orleans continues in maintaining its position as one of the nation's largest ports with a total of foreign and domestic waterborne commerce tonnage of approximately 146 million tons in 1986 while the Port of Baton Rouge, located 125 miles upriver, is the fifth port in the nation. Both port complexes are entirely dependent upon timely and adequate dredging of the Southwest Pass to provide access to the Gulf. Judging from past experiences with spring thaws bringing higher river stages and higher rates of siltation, we feel that the proposed budget of $48,040,000 is adequate even with maintaining the new 45-foot channel in Southwest Pass, Bar Channels, and crossings upon completion of the construction dredging this coming Fall. Included in the budget request is the amount of $6,667,000 for bank stabilization (nourishment). While it is important to receive this amount, we do feel that additional work needs to be accomplished in order to complete the project. An additional equivalent amount of $6.7 million would bring us closer to completion -- but even more hopefully we request that the Corps be fully funded to complete the bank stabilization feature of the project if the capability exists -- thus, realizing earlier-on the benefits in decreased maintenance cost.

We are equally concerned with maintaining adequate depths and channel widths in the Mississippi River-Gulf Outlet Channel. In 1985, the waterborne commerce handled on the MRGO generated $505,000,000 in direct economic impact. Total (direct and indirect) economic impact of the MRGO in 1985 was $1,100,000,000. Although maintenance costs on this project cannot be related to any shoaling rate but more to severity and intensity of unpredictable Gulf storms, we believe that funding in the amount of the Corps' full capability of $7,108,000 will be adequate and so recommend. Incidentally, in 1986 the 1,986 vessels calling on the MRGO Tidewater facilities accounted for 44% of the general cargo tonnage handled over public facilities at the Port of New Orleans.

The $500,000 construction funds proposed for the Mississippi River-Gulf Outlet, New Ship Lock project are also essential at this time for the continuation of the economic feasibility reevaluation studies.

The operation and maintenance features of the Mississippi River Outlets at Venice, Louisiana are fundamental in providing safe and essential offshore support access to energy-related industries. We strongly recommend that the $994,000 be approved for continued maintenance of these critical east-west navigation channels.

Finally, we urge continuation of general investigation funding to determine the advisability of deepening and widening that segment of the Gulf Intracoastal Waterway from New Orleans to Brownsville, Texas. The requested amount is $210,000. This study addresses our concerns over bank erosion, salt water intrusion, and required improvements for the safety and efficiency of the waterway.

In closing, I would like to speak to one additional project that deserves our attention; that is, the Red River Waterway, Mississippi River to Shreveport, Louisiana Project, providing for 236 miles of navigation improvements, 225 miles of channel stabilization works, and various recreational facilities. The $118 million in the budget request is essential for continuing the completion of this project--ultimately to result in stimulating economic growth along the basin of the Red River.

Mr. Chairman, this concludes my statement. Thank you.

STATEMENT OF THE NEW ORLEANS STEAMSHIP ASSOCIATION

1. Forty-Five Foot Channel for Lower Mississippi River.

   We recommend that the Corps be appropriated the proposed $3.8 million for mitigation features to complete the first phase of this project. This funding would provide a reliable 45-foot channel to mile 181 AHP before the end of 1988.

2. Channel Stabilization and Maintenance Dredging of Southwest Pass and Maintenance Dredging of the Mississippi River from Baton Rouge to the Gulf.

   The Lower Mississippi River ports, from the Gulf to Baton Rouge, rank as a leading World Port area. The proposed budget for FY 89 is $48.04 million for Operation and Maintenance, General, Mississippi River, Baton Rouge to the Gulf and Southwest Pass including the necessary channel stabilization. We urge the approval of the $48.04 million along with an additional $6.7 million as a minimum. This would aid the project and in the final analysis reduce O&M costs in the future. We also encourage approval of added funds should a greater Corps capability exist.

3. The Mississippi River-Gulf Outlet Maintenance Dredging.

   Located on this waterway are the Port of New Orleans' Bulk Handling Plant, most of the Port's container facilities, the ro-ro terminal and additional facilities under construction which provide newer cargo handling methods to accommodate the larger ships now serving international trade. It is recommended that the Corps' full capability of $7.108 million be appropriated for Mississippi River-Gulf Outlet, Operation and Maintenance, General.

4. The Mississippi River-Gulf Outlet, New Ship Lock.

   The planning and design for the urgently needed New Ship Lock continues. This lock, once in operation, will relieve existing hazardous congestion and costly delays to foreign commerce. It will promote the economic growth and development of water-oriented industries along the Mississippi River and the Mississippi River-Gulf Outlet, thus promoting the future growth of the Port area of New Orleans. It is urged that the Congress provide the $500,000 proposed for the continuance of the lock design and related matters.

5. The Red River Waterway, Mississippi River to Shreveport, Louisiana.

   We urge that the budget of $118 million which is necessary for the continuation of the project be approved. It will improve the economic situation of Louisiana, along the Red River Basin, and benefit the port of Shreveport and the ports on the Lower Mississippi River. The benefit comes from providing a direct water link between Shreveport, a major distribution center serving Louisiana, Texas, Oklahoma, and Arkansas, and the ports of Plaquemines, New Orleans, South Louisiana and Baton Rouge.

My name is Channing Hayden. I am Vice President of the New Orleans Steamship Association. Our membership of some 59 steamship owners, operators, agents and stevedores on the Lower Mississippi River is associated with hundreds of ship owners in international commerce.

My testimony concerns projects essential to the future of international commerce on the Lower Mississippi River from Baton Rouge to the Gulf. These projects, listed below, impact the nation in jobs and our ability to compete in world markets. They should be funded as noted in our summary.

1. Completion of the first phase of the Forty-Five Foot Channel for Lower Mississippi River to mile 181 AHP.

2. Channel stabilization and maintenance dredging of Southwest Pass. Maintenance dredging of the Mississippi River from Baton Rouge to the Gulf.

3. Maintenance dredging of the Mississippi River-Gulf Outlet.

4. Continuation of the Design Program of the Mississippi River-Gulf Outlet New Ship Lock.

5. The continuation of the Red River Waterway project (Mississippi River to Shreveport, LA).

Channel stabilization along with maintenance dredging of Southwest Pass is vital in keeping project draft. Project draft, in turn, ensures that the Mississippi River's deep water ports will continue to handle the country's foreign waterborne commerce in the most cost effective way possible.

For years we have urged this committee to provide funds to maintain project draft at Southwest Pass. You have responded and the resulting benefits have proven the wisdom of your action not only for our area but

the entire hinterland served by the Mississippi River System. We all remember 1973 and 1974 when Southwest Pass was below project draft 70% of the time. Fortunately, those times have not reoccurred. This can be credited to a combination of factors--your help, the constant vigilance of the Bar Pilots, the Corps, and the maritime community, along with last year's work for the new 45-foot project. The charts attached show that since 1980 we have operated at or above the project draft of 40 feet more often than not. The funding you have provided was money well spent because it accomplished our goal. But we must continue the funding for two reasons.

First, we have to maintain what has been achieved. The Bar Pilots have taken advantage of tidal flows and other factors, which include the past years' construction work, to recommend the maximum draft possible consistent with navigational safety. This is reflected in the pilots' draft recommendation which gradually increased to 45 feet for vessels under 100,000 DWT and 44 feet for vessels 100,000 DWT and over; 4 to 5 feet over the old 40-foot project. Four feet (48 inches) to a large vessel with a loading capacity of 250 tons per inch means an additional 12,000 tons of cargo. At a freight rate of $15 per ton, this would be a $180,000 increase in revenue. This is what keeps the Lower Mississippi River ports competitive.

We have operated at or over the old 40-foot project for the past 31 months and are beginning to see the prospects of the new 45-foot project. The Corps has been instrumental in this success. The repairs to the jetties and dikes and their fast response to shoaling has prevented the channel from deteriorating below project. It has allowed a quick recovery to project dimensions when the channel did deteriorate. This is seen clearly from the attached charts. The funds we are requesting for maintenance dredging and other works are essential for our continued success in maintaining a reliable channel.

Secondly, before this time next year we anticipate the first phase of the new 45-foot project will be completed--a 45-foot channel to mile 181 AHP. We owe you our thanks for providing the federal share of the funds for the deeper channel. But the deeper the channel the more important is channel stabilization. By ensuring adequate channel stabilization work the maintenance cost of the deeper channel is minimized. If reoccurring maintenance dredging can be minimized by investing in this work, then the investment is cost effective. The quicker the new 45-foot project is maintained with completed stabilization, the quicker the greater benefits of the new channel will be fully realized. This ultimately will minimize O&M costs.

In addition, funds are needed to have dustpan dredges available to dredge the crossings above the city of New Orleans. These crossings control the draft limitation at 8 of the 10 area grain elevators.

This is why we have requested $3.8 million for the mitigation features of the new 45-foot project as well as the $48.04 million for maintenance dredging of Southwest Pass, Mississippi River, Baton Rouge to the Gulf, with an additional appropriation of $6.7 million, at least, plus added funds, if needed, to give the Corps its full capabilities.

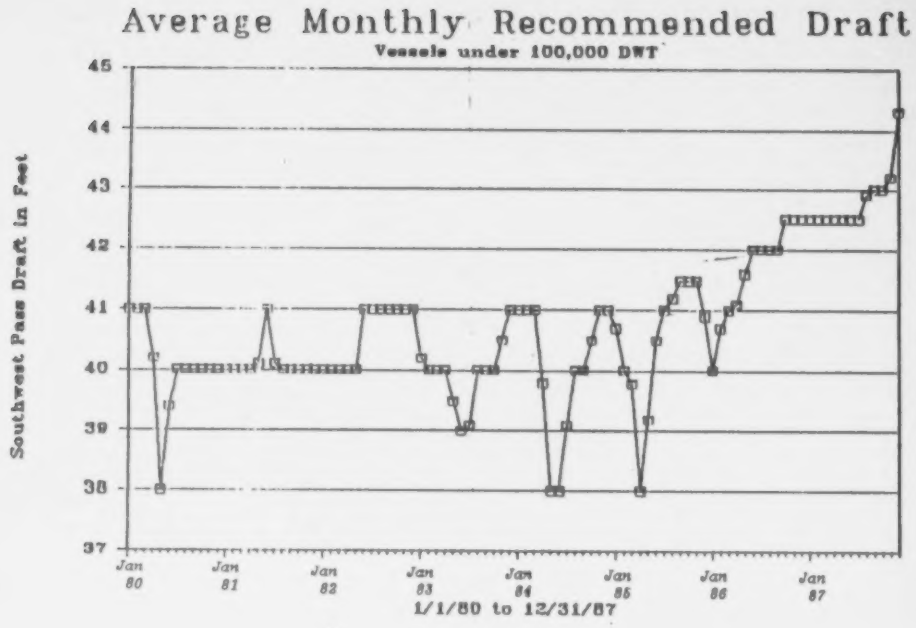
The growth of the Port of New Orleans depends, in large measure, on the Port's container and ro-ro facilities, and the Bulk Handling Plant, among others, located on the Mississippi River-Gulf Outlet. In the late 70's we averaged some 1,260 deep draft transits annually. In the early 80's we averaged 1,500 annually, a 19% increase. In the last few years we averaged a 16% increase in deep draft transits. This channel was severely restricted in depth and in width. The funds you have provided has allowed the Corps to improve the channel considerably. Despite the Corps' best efforts, the channel width is still somewhat limited. This seaway has a project depth of 36 feet. Still for safety reasons on this narrow channel, restrictions apply to vessels with a draft of 30 feet or more. Such vessels cannot meet or pass in certain areas of this channel causing delays to the tightly scheduled container vessels using the Mississippi River-Gulf Outlet. The specialty vessels serving the port's facilities are becoming larger. This channel, with less than stable full project dimensions will cause problems for these larger vessels, reducing our ability to grow with the trade. To improve safety on this channel, we request that the Congress appropriate $7.108 million, the necessary full capability of the Corps for Operations & Maintenance, General, Mississippi River-Gulf Outlet. In addition, to further reduce or eliminate transit restrictions and delays, funds should be appropriated to dredge and maintain a holding area or areas so very large ships can transit without closing the channel to other vessel traffic.

The container terminals and the Public Bulk Terminal are located on the Mississippi River-Gulf Outlet. Grain, other bulk facilities, and the general cargo wharves are located on the Mississippi River. An adequate route between the Mississippi River-Gulf Outlet and the river is essential for efficient transit between these facilities. The shortest route is an inefficient, antiquated lock built in the 1920's with a width of 75 feet and limited to a depth of 30 feet. Its maximum capacity has long been exceeded. The average waiting time for passage through the lock has increased from 8-1/2 hours in 1985 to about 12 hours at present; however, I am personally aware of waiting time of as much as 40 hours in some instances.

A much larger ship lock is necessary to accommodate the size of today's large vessels. We urge that Congress provide the requested $1/2 million for this project. This is important if the reevaluation of this project is to be completed as expected in about two years. Any delays are unthinkable since the new lock is long overdue.

The Red River Waterway, Mississippi River to Shreveport, Louisiana, Project is directly related to our Port. The continuation and completion of this work will stimulate the economy all along the Red River basin with jobs and additional international trade. This stimulated trade will service the port of Shreveport and the ports on the Lower Mississippi River, providing needed growth and benefitting the states of Louisiana, Texas, Oklahoma, and Arkansas, which are served through the Shreveport distribution center. We urge that the budget of $118 million necessary for this project be appropriated.

I appreciate the opportunity to appear before you today. Thank you.


Average Monthly Recommended Draft
Vessels under 100,000 DWT
Southwest Pass Draft in Feet
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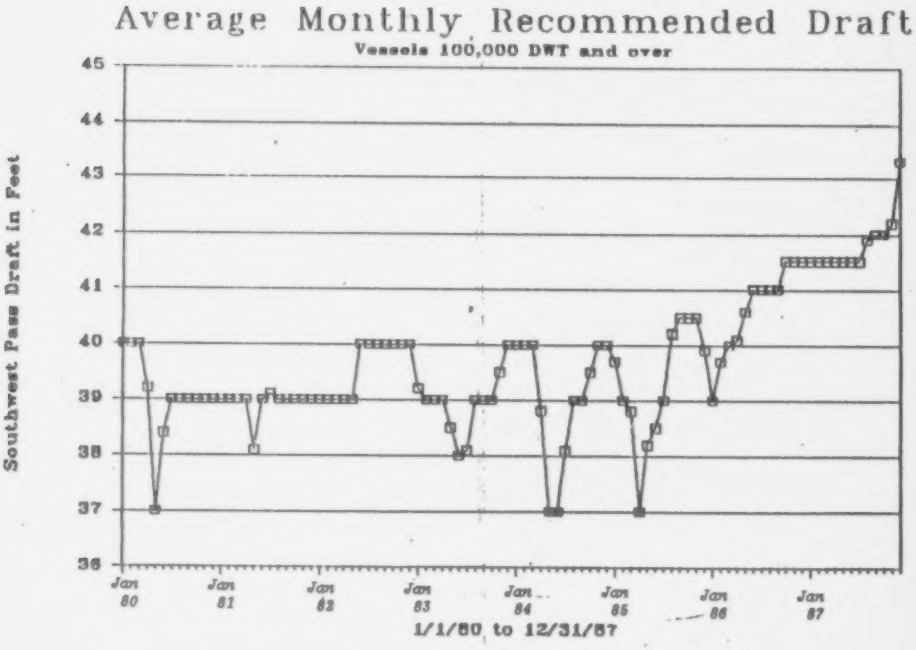
Average Monthly Recommended Draft
Vessels 100,000 DWT and over
Southwest Pass Draft in Feet
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1/1/80 to 12/31/87

STATEMENT OF THE ASSOCIATED BRANCH PILOTS FOR THE PORT OF NEW ORLEANS

I am Jacques Michell, President of the Associated Branch Pilots, the Bar Pilots for the Port of New Orleans, Louisiana.

The Associated Branch Pilots is one of three pilot associations applying specialized piloting techniques to meet the demands of safe and efficient navigation in one of three distinct areas on the part of the Lower Mississippi River that lies between Baton Rouge, Louisiana and the Gulf of Mexico. We are called Bar Pilots because of the sand bars that constantly build and change in the area in which we pilot the large ocean going ships that call at the deep water ports on the Mississippi River. The area at the mouth of the river is the narrow, shallow entrance to the Mississippi River system known as Southwest Pass. It is the area in which we pilot the largest ships at the deepest drafts and in the greatest numbers. We are also pilots for the Mississippi River Gulf Outlet which is a manmade channel seventy-five miles long, that begins in the Gulf of Mexico and intersects the intercoastal waterway system at New Orleans. In 1987 the Associated Branch Pilots performed pilotage on more than 12,090 occasions.

I would like to testify with the Board of Commissioners of the Port of New Orleans on projects that are of vital interest to safe navigation and maritime commerce on the lower Mississippi River.

The versatility of the lower Mississippi River system in accommodating road, rail, and the most cost effective mode of transportation, waterborne transportation, is vital to the local area, the states in the region of the Mississippi River valley, and the nation.

The United States Army Corps of Engineers has recently completed the first phase of the deepening of the channel in the lower Mississippi River from forty feet to a depth of forty-five feet from the Gulf of Mexico to a point just below Baton Rouge, Louisiana. The second phase, which will be completed this year, will provide a forty-five foot channel all the way to the port of Baton Rouge. This will mean that the second and fifth largest ports in the United States, rankings determined by cargo tonnage handled, will have enhanced access that will accommodate vessels with deeper drafts.

To the world shipping community this means that calling at ports on the Mississippi River will be more profitable as larger ships will be able to call at the ports and ships that presently call will be able to take greater amounts of cargo per voyage.

The results have several related benefits. As the earning potential of ships increases freight rates decrease. The resulting savings are reflected in the cost of the product to the buyer. Since coal and agricultural products are shipped in such large quantities from the Mississippi valley through the river system the desirability of these products, from their sources within the United States, increases. The result to the producer can be either increased profits or increased amounts of product sold.

Increasing the demand for export of domestic commodities is a goal of every trading nation and certainly of increasing importance to the United States as our trade deficit grows. The projects identified by the Corps of Engineers enhance the goals of the United States with regard to trade.

Although the construction and maintenance of these projects lie within the state of Louisiana they have an impact on the other states in the Mississippi River valley and an effect on all of the citizens of the United States.

Louisianians are an integral part of this national effort. By providing efficient ports for the transshipment of cargos produced or consumed in the United States we serve the interests of our fellow citizens nationwide. Many of Louisiana's citizens are employed by the Corps of Engineers. The extra effort that accompanies their dedication and professionalism can be seen in the planning, design, construction, and maintenance of the projects that have been completed.

That extra effort can also be seen in the performance of pilotage by the members of the Associated Branch Pilots. The area of the Southwest Pass of the Mississippi River is the gateway through which 85% of the foreign commerce entering or leaving the river must pass. Ships whose summer deadweight tonnages are greater

than one hundred thousand tons transit daily. The largest ship thus far was 284,000 summer deadweight tons. Although the ship did not call for cargo it indicates the capability of the channel and the people utilizing it. Early this year the aircraft carrier Forrestal paid a visit to the port of New Orleans. The U.S. Navy is a regular and welcomed visitor. Southwest Pass is a most important area in which the Bar Pilots are giving that extra effort.

By applying their piloting skills Bar Pilots have over the years been able to make the fullest use of the channels constructed and maintained by the Corps of Engineers. In 1987 ships earned excess revenues that were conservatively determined to be more than $15 million. The pilots efforts in 1987 will be recognized by an award that will be presented by the World Trade Center on April 15 in New Orleans. The excess revenue earned was attributed to the skill and professionalism of the pilots who piloted ships at the deepest drafts possible thus enabling ships to carry more cargo. The $15 million figure only encompassed additional freight rate earnings at drafts greater than forty feet, cargo value and ancillary services were not included. This could not have been accomplished without a like effort from the Corps of Engineers by providing reliable maintenance of the channel. Acknowledgement of the Corps efforts will not go unattended.

Over the years the Corps of Engineers has studied, designed, and improved the channels leading to the facilities at the ports along the Mississippi River by constructing training works, pile dikes, bulkheads and bank nourishment projects. As they continue to develop and improve those channels their design makes them self-maintaining.

Despite the Corps' efforts, conditions periodically occur that require individualized attention. Unpredictable and above average snowfall and rainfall can result in increased amounts of siltation in Southwest Pass. By proper management and prioritization, the Corps has been able to effect timely restoration of the authorized channel dimensions. Full Corps capability in this area should continue to be funded in order to insure the Corps' ability to continue to respond effectively.

The dollars sought can be justified in many ways. The extra effort in seeing to it that the greatest possible return is gained is something we in Louisiana call lagniappe. Lagniappe is that little extra you get from Louisiana people who know their jobs and do them well.

Funding of the Corps' initiatives in the Lower Mississippi River is money that has been proven to be well spent and money that will return. I urge your support of the funding for the U. S. Army Corps of Engineer's capability.

Mr. Chairman, this concludes my statement.

Mississippi River Ship Channel

Senator Johnston. We are delighted to have Mr. Hayden here.

Mr. Hayden. Mr. Chairman, thank you for having me here. I am going to be very brief.

I distributed some photographs and a map to your staff. The map will give you an idea of how we are coming on the 45-foot project. We are from Southwest Pass through New Orleans with the 45-foot project.

We just have a little bit of work to do in Southwest Pass at one end. We have a 700-foot-wide channel, and we are supposed to have 800 feet, but the pilots are doing fine; they are working around it.

Senator Johnston. How long will that channel last without coming back in?

Mr. Hayden. We hope forever, with the bank stabilization that is going on. From the photographs, you can see the rock walls that the Corps of Engineers is building. Hopefully, that is going to cause a self-scouring action of the river to keep itself cleaned out and help reduce the O&M in the future. That is why that channel stabilization project is

so important. You can see that the rock walls have been built down in the Southwest Pass. We still have some areas to go.

As far as the 45-foot channel is concerned, we effectively have a 45-foot channel all the way to Baton Rouge right now because we are in the middle of high water. So the project is working out really well. We are bringing out ships at 45 feet. We are using all the water that you have given to us.

I want to thank you for your support in the past and ask you to continue your support. Thank you for your attention.

Senator JOHNSTON. Without objection.

Thank you very much, gentlemen. I enthusiastically support your project, as you know.

Mr. HAAR. Thank you very much, Mr. Chairman. We appreciate your support over the years.

Thank you, sir.

Senator JOHNSTON. Thank you very much.

Next, I am pleased to welcome Mayor Toye Taylor from the city of Bogalusa, La.

Mayor, welcome to the committee. I think it is your first time to testify before us. We are glad to have you.

WEST PEARL RIVER NAVIGATION

STATEMENT OF M.E. "TOYE" TAYLOR, MAYOR OF BOGALUSA, LA.

Mayor TAYLOR. Good afternoon, Mr. Chairman.

I am Toye Taylor, mayor of the city of Bogalusa, and I represent our city of about 17,000. We appreciate the opportunity to address you today on an issue that is very important to us. I am here to request a line item in your budget for resumption of maintenance dredging and operation of the West Pearl River.

The city of Bogalusa has just been advised by Gen. Thomas A. Sands, Division Engineer for the Lower Mississippi Valley Division of the Corps of Engineers, that he has approved the Vicksburg District's report which recommends resumption of maintenance dredging at the West Pearl River.

We in Bogalusa regard this as exceptionally good news since our city leaders and local businessmen have been seeking resumption of the use of this waterway as a significant critical element of our economic recovery.

This approval came as a result of our request that the matter be reconsidered by General Sands, and his decision was obviously reached beyond the time when funds for accomplishing the recommendation of the Corps of Engineers could be included in their proposed budget, which you are now considering. Accordingly, we are requesting your assistance in the appropriation of required funds to enable dredging resumption and maintenance and operation of this navigation project.

The original navigation project completed in 1956 consists of almost 58 miles of navigable waterway, and it includes three locks. A decline in commercial traffic in the early 1970's led to a cessation of main-

tenance dredging. The current demand for the use of the waterway has increased dramatically.

Senator JOHNSTON. I am advised on that, Mayor, that there are some industries that are willing to come in and put in some jobs in the Bogalusa area if we can get this going again. Is that correct?

Mayor TAYLOR. Correct, Mr. Chairman. The benefit to cost ratio is 16 to 1 on this project. The Corps' report indicated that it could go much higher.

REACTIVATION OF EXISTING PROJECT

There are just a few significant factors that I would like to get across. This request concerns reactivation of an existing project, not the creation of a new one. The resumption of this project is an integral part of our plan for economic development to overcome the extremely high unemployment rate that we are now facing.

Local private industry in Bogalusa has committed over $160 million for expansion in the next 2 years, which has gone to generate an even greater demand for the use of this waterway.

Finally, the rail service in that area is continually diminishing. We have adopted an attitude in Bogalusa of carrying out our own load and making positive things happen in the economic climate of our community. It is beyond our responsibility, authority, and perhaps, means, to proceed beyond this point.

Therefore, we are asking for your favorable consideration of our request to include funds in the budget, which you are currently considering, to effect resumption of maintenance and operations of the West Pearl navigation project.

Once again, I would like to thank you for the opportunity to appear today, and I would be glad to answer any questions.

Senator JOHNSTON. Thank you very much, Mayor. Let me say that I was delighted to get the word from the Corps and, of course, we have been in close contact with the Corps on their study. We are delighted that they did come through, as expected, to recommend that we recommence that maintenance dredging.

SHIPPERS READY TO RESUME SHIPMENTS

I think that it is on of the best projects in the state. In addition to having a very high benefit-to-cost ratio, we have, as you know, shippers that are ready right now to resume shipments. They want to use this facility today. If we had it open today, they would be using it today.

I think that we just have to find a way, I can't tell you now how we are going to do it, I know about all the difficulties we have, but we have to find a way to get this opened because it would be a tragedy, I think, to have this good project there, with an economic impact which you can prove, you don't have to predict, you can prove the economic impact of this project.

I am going to do everything I can to get it in this year's budget. I don't know how we are going to be able to do it, but I will at least commit to you that I am going to do everything I can to help on this project.

I appreciate your appearing before the committee. You make a very good witness. Thank you very much for coming.

Mayor TAYLOR. Thank you, Senator Johnston. On behalf of the citizens of Bogalusa, we do appreciate your loyal support.

Senator JOHNSTON. Thank you, Mayor.

[The statement follows:]

STATEMENT OF CITY OF BOGALUSA, LA

Gentlemen:

The City of Bogalusa has just been advised by General Thomas A. Sands, Division Engineer for the lower Mississippi Valley Division of the Corps of Engineers, that he has approved the Vicksburg District's report which recommends resumption of maintenance dredging of the West Pearl Project. We regard this as exceptionally good news since a group of city leaders and local businessmen have been seeking resumption of use of this water way as a significant, critical element of our economic recovery. This approval came as a result of our request that the matter be reconsidered by General Sands and his decision was obviously reached beyond the time when funds for accomplishing the recommendation of the Corps could be included in their proposed budget which you now consider. Accordingly, we are requesting your assistance by appropriation of required funds (estimated to be approximately $800,000 for dredging plus $200,000 for operational costs) enabling dredging, resumption of maintenance and operation of this navigation project.

The original navigation project consisted of almost fifty-eight (58) miles of navigable waterway including three (3) sixty-five (65) foot by three hundred ten (310) foot locks with a total lift of more than fifty-two (52) feet was completed in 1956. A decline in commercial traffic in the early 1970's resulted in cessation of maintenance dredging. Current demand for use of the waterway has increased dramatically, however, and it is anticipated that the sixteen to one benefit to cost ratio included in the report from the Vicksburg District will be far exceeded. Their analysis showed that an estimated 950,000 tons of water-born commerce could be expected to be transported on the West Pearl River during the first full year of operation.

Please consider the following significant factors related to our request for restoration of this project to a usable condition:

1. This request concerns reactivation of an existing project - not creation of a new one.

2. The reasonable anticipated expenditure for reactivation represents preservation of a significant previous investment by our government.

3. We have worked diligently at the local level to assure reasonable benefit for the expenditure requested.

4. Resumption of this navigation project for commercial use is an integral part of our plan for economic development to overcome the extremely high unemployment rates now being experienced.

5. Local private industry expansion totaling more than $160,000,000 in capital outlay within the next two (2) years will generate even greater demand for this waterway.

6. Rail service in this area is being continually diminished.

7. We have received an expression of interest for development of several other commercial ventures when use of the canal is possible.

8. We and our local Industrial Development Foundation will seek to provide a feasibility study for the development of a local port which could greatly intensify use of the West Pearl River Navigation Project in the future.

We have adopted an attitude of carrying our own load and making positive things happen in the economic climate of our community. A significant amount of time and energy have been expended in reviving interest in this project and in gaining approval from the Corps of Engineers. The need is now evident. It is beyond our responsibility, authority, and perhaps means, however, to proceed beyond this point. We now request that you designate this relatively minor sum of money as federal budgets go to enable us to continue our quest for a healthy local economy.

We are furnishing a packet of information which includes resolutions and letters from other political entities, estimates of anticipated use by local industry, statements of interests by other commercial ventures, and the report of the assessment by the Corps of Engineers. We will be pleased to address other questions which you may have.

Some selected statements from the Final Enviromental Assessment and Statement of Findings by the Commander of the Vicksburg District of the Corps of Engineers included the fact that the Corps determined that significant potential beneficial impacts could improve the economy of Bogalusa; that the overall benefit to cost ratio of sixteen to one would require only two (2)' tows per day average; that no secondary adverse effects from development of an industrial corridor along the West Pearl would follow since ownership of contiguous property is by the federal and state governments; that the project will have so little impact on the enviroment that an enviromental impact study is not even required; and that the project is economically justified and could be accomplished in the overall public interest.

We ask your favorable consideration of our request to include funds in the budget which you are currently considering to effect resumption of maintenance and operation of the West Pearl River Navigation Project.

Letter From Maj. Gen. Thomas A. Sands, U.S. Army, Division Engineer, Lower Mississippi Valley Division

REPLY TO
ATTENTION OF:

March 31, 1988

Executive Office

Honorable Toye Taylor
Mayor, City of Bogalusa
Post Office Drawer 1179
Bogalusa, Louisiana 70427

Dear Mayor Taylor:

This is in response to your letter of February 15, 1988 concerning the West Pearl River Navigation project, and a follow-up of our visit on February 18, 1988.

I am pleased to advise that my office has approved the Vicksburg District's report which recommends resumption of maintenance dredging of the West Pearl project.

If I may be of further assistance, please don't hesitate to call.

Sincerely,

Thomas A. Sands
Major General, U.S. Army
Division Engineer

LETTER FROM TOYE TAYLOR, MAYOR, BOGALUSA, LA

March 17, 1988

General Tom Sands
Division Engineer
Corps of Engineers
Lower Mississippi Valley Division
P. O. Box 80
Vicksburg, MS 39180

Dear General Sands:

I received correspondence from Congressman Richard Baker's office this week indicating that letters of support from local officials would need to be forwarded to you.

I am enclosing copies of resolutions from the Bogalusa City Council as well as other organizations. Also, enclosed will be a letter of support from Representative Trent Lott of Mississippi. In addition to this, I am enclosing our most updated correspondence with some companies who are interested in a port for the City of Bogalusa.

We have other correspondence which dates back 5 or 6 years. If you would like copies of this, please let me know.

I hope this information will be of some benefit to you and your staff as the decision time is drawing near.

If this office can be of further assistance, please don't hesitate to call.

With warm personal regards, I remain

Sincerely,

Toye Taylor

Toye Taylor, Mayor
City of Bogalusa

TT/nc

STATEMENT OF GAYLORD CONTAINER CORP., LA

The Bogalusa, Louisiana mill of Gaylord Container Corporation is planning to expand its capacity by 270,000 tons of linerboard and bag paper. This additional capacity will be on line in 1990 and will peak in 1991:

The material requirements of the mill will be:

Pine Pulpwood	580,000 cords
Hardwood Pulpwood	130,000 cords
Pine Chips	700,000 cords
Secondary Fibers	165,500 tons
Pulping Chemicals	36,200 tons
Coal	71,000 tons
Wastewood Fuel	710,000 tons
Fuel Oil	25,000 bbls

While not all of the above could be transported by barge due to the physical location of the materials, barge transportation could be used for all of the coal and fuel oil requirements plus part of the other materials.

Barge transportation could also be used to transport the finished products to locations where port facilities are available.

We could also use barge transportation for approximately 50% of the black liquor shipments and green liquor receipts of 277,500 tons (actual 1987).

Letter From Richard S. Stemmer, General Manager, Louisiana Scrap Metal Co.

January 19, 1988

Washington Parish Industrial Development Foundation
Bogalusa, Louisiana

Dear Sirs:

We have heard through a business associate, Mr. O.A. Green, of the proposed development of the Pearl River Navigation System and we are extremely interested in keeping informed as things develop.

If and when this development progresses, we would like the opportunity to entertain the possibility of a yard location that would enable us to receive and ship scrap using barges.

We would appreciate you keeping us posted of any further developments.

Sincerely,

Richard S. Stemmer
General Manager

LETTER FROM CONGRESSMAN TRENT LOTT OF MISSISSIPPI

December 17, 1987

The Honorable Harold L. Ritchie
Councilman at Large
Bogalusa City Council
City of Bogalusa
Post Office Drawer 1179
Bogalusa, Louisiana 70427

Dear Mr. Ritchie:

I appreciate receiving your recent letter regarding the Pearl River Canal Project for reopening the canal to barge traffic. It is true that there are no funds allocated in the 1988 fiscal year appropriations bill for this project. However, I agree with you that it is something that the Corps should consider as a part of their budget request to the Congress for fiscal year 1989.

Again, thank you for the informative and helpful letter. Keep me posted on your efforts and let me know how I can be helpful to you.

With best wishes for a happy holiday season, I am

Sincerely yours,

Trent

Trent Lott

LETTER FROM DAVID B. DOSS, EXECUTIVE DIRECTOR, BOGALUSA CHAMBER OF COMMERCE

March 18, 1988

The Honorable M. E. Taylor
Mayor of Bogalusa
PO Drawer 1179
Bogalusa LA 70427

Dear Mayor Taylor:

On behalf of the members of the Bogalusa Chamber of Commerce, I applaud your efforts to get the West Pearl River reopened as a navigable waterway. We are aware of the positive economic impact that this would have on our community and offer our full support.

If we may be of assistance in any way, please do not hesitate to call.

Sincerely,

David B. Doss

David B. Doss
Executive Director

Letter From Rollend Young, Cascade West, Transportation Brokers, Inc., Portland, OR

November ... 19..

Mr. William Sconiers, Director
Washington Parish Industrial Development Group
P.O. Box 668
Bogalusa, LA 70427

Dear Mr. Sconiers:

It was good to talk to you by phone on the 11th of this month. The information given to us about the possible opening of the Pearl River Waterway, was of great interest.

I feel that the opening of this waterway would be a great help to the transportation industry in that area of the state and the areas of Mississippi that it could serve. Anything that can be done by your group to help open the project for water shipments will help very much.

If this waterway system is opened for barge traffic I feel that we would show a great interest in operating on the river system. Please keep us updated on the progress made.

Hoping to hear good news on the project.

Rollend Young
Marine Consultant

STATEMENT OF WASHINGTON INDUSTRIAL DEVELOPMENT FOUNDATION, INC.

The Washington Industrial Development Foundation is a private, non-profit, tax-exempt foundation organized by Washington Parish residents. The primary goal of W.I.D.F. is to facilitate an intensive program of economic and industrial development in an effort to create a significant number of new job opportunities. The executive director will assist local firms who wish to expand their operations and will enable our parish to attract firms from outside the area who wish to expand or relocate.

The original navigation project on the West Pearl River provided navigation from its mouth to the vicinity of Bogalusa, Louisiana. The project provided a channel 7 feet deep at low water with a 100-foot bottom width from the mouth north to mile 29.5; a 20.2-mile canal with a 7-foot depth and an 80-foot bottom width; and 9.3 miles of channel (7 feet by 100 feet) in the river from Pool's Bluff to the convergence of Bogue Lusa Creek (between miles 57 and 58). Three locks, each 65 feet by 310 feet (inside dimensions) provide a 52.7-foot lift and are constructed at miles 29.7, 40.8, and 44.0 respectively, on the canal. The project was completed in 1956. In the early 1970's, commercial traffic declined to the extent that continued maintenance of the channel and canal dimensions could not be justified; therefore, maintenance dredging of the navigation project was suspended and the lock structures were placed in a caretaker status. The primary use of the waterway at this time is for recreational purposes. However, from 1970 to date, commercial interests have used the waterway during periods of high water.

In late 1983 and early 1984, a group of businessmen and local leaders from the Bogalusa area expressed a desire to have the Vicksburg District to resume navigation on the West Pearl River. A request was submitted to the Corps of Engineers to conduct a study to determine the feasibility of resuming maintenance and operation of the existing navigation project. The request was based on the increased inquiries from business concerns and changing economic conditions along the river.

The Vicksburg District, Corps of Engineers has completed a preliminary study and has determined that significant potential beneficial impacts could accrue to the economy of Bogalusa and areas adjacent to the West Pearl River as a result of restoring navigation to the system.

A major portion of the potential benefits identified in the study were based on the assumption that public port terminal facilities would be constructed on the West Pearl River in the vicinity of Bogalusa and that on/off loading facilities for sand and gravel operations would be constructed at several locations along the river. As a result of the analysis, an estimated 950,000 tons of waterborne commerce could be expected to be transported on the West Pearl River during the first full year of operation. Increases are projected throughout the life of the project. Overall, the project could have a benefit-cost ratio of 16 to 1. This means that the project could provide about $16 in direct benefits for each dollar expended to restore and maintain the system. The direct economic benefits would include transportation of agricultural products and services, nonmetallic minerals (including fuels), and construction materials.

RESOLUTION OF BOGALUSA, LA

RESOLUTION NO. __1055__

A RESOLUTION to urge and request the Secretary of the Louisiana Department of Wildlife and Fisheries to approve the application of Pearl Industries, Inc. for dredging in the West Pearl River, said application to be filed during the latter part of November, 1983.

WHEREAS, the City of Bogalusa is desirous of establishing a barge terminal in Bogalusa for shipping and receiving cargo via barge traffic on the Pearl River; and,

WHEREAS, the establishment of said barge traffic would provide employment for approximately 300 to 600 persons within the first two years of operation, thereby reducing the 20% unemployment rate; and,

WHEREAS, the U. S. Army Corps of Engineers has constructed and still maintains the locks on the Pearl River navigational canal which were constructed for the specific purpose of supporting commercial barge traffic on the Pearl River; and,

WHEREAS, there are not sufficient funds in the budget for the U. S. Army Corps of Engineers to perform the dredging necessary to remove sandbars and other debris from the existing river channel; and,

WHEREAS, U. S. Congressman Henson Moore and others have encouraged the City of Bogalusa to exhibit its real interest in this dredging activity by securing a local firm which will undertake the dredging at no cost to the federal or state governments by allowing said firm to sell the dredged material from the bottom of the river to offset dredging cost; and,

WHEREAS, Pearl Industries, Inc., has agreed to perform the dredging required on the West Pearl and Pearl River to clean out the existing river channel for commercial navigation; and,

WHEREAS, Gulf South Research Institute, Inc., has undertaken the enviromental impact study required by the Louisiana Department of Wildlife and Fisheries, which study will be completed and filed with said department by the latter part of November, 1983; and,

WHEREAS, several private firms have indicated that they will make substantial commitments of capital investment and employment in the Bogalusa area as soon as they are certain that the Pearl waterway will be open for barge traffic; and,

WHEREAS, the waterway route from Bogalusa runs from the Pearl River through the Pearl River Navigational Canal, through the West Pearl River, into Lake Borgne and into the intercoastal waterway; and,

WHEREAS, the West Pearl River has been included in the Louisiana Scenic Act; and,

WHEREAS, river and streams included in the Scenic River Act are protected from harm by the Louisiana Department of Wildlife and Fisheries; and,

WHEREAS, the regulations of said Scenic River Act do not prohibit Class "B" uses, such as dredging for the purpose of cleaning out the existing channel; and,

WHEREAS, permission for a Class "B" use permit for such dredging is within the discretion of the Louisiana Department of Wildlife and Fisheries; and,

WHEREAS, such dredging and commercial navigation is compatible with the concerns of the Louisiana Department of Wildlife and Fisheries in protecting the environment on said river; and,

WHERLAS, it would be in the best interest of the citizens of the City of Bogalusa area, and of the entire state of Louisiana, for the Louisiana Department of Wildlife and Fisheries to issue a Class "B" use permit to Pearl Industries, Inc., for dredging on the West Pearl River as will be indicated in its application; and,

THEREFORE, BE IT RESOLVED, that the Mayor and City Council of the City of Bogalusa hereby endorse the dredging of the Pearl and West Pearl River for the purpose of removing sandbars and debris from the existing channel and opening said channel for commercial barge traffic; and,

BE IT FURTHER RESOLVED, that the Louisiana Department of Wildlife and Fisheries is urged and requested to approve the forthcoming application of Pearl Industries, Inc., for dredging on the West Pearl River and to issue a Class "B" use permit for same.

Mervin E. "Joye" Taylor
COUNCILMAN MERVIN ED "TOVE" TAYLOR

Reubin Sumrall
COUNCILMAN REUBIN SUMRALL

William Bailey Jr
COUNCILMAN WILLIAM BAILEY, JR.

ABSENT
COUNCILMAN MICHAEL RICHMOND

Larry "Nub" Galloway Sr
COUNCILMAN LARRY "NUB" GALLOWAY

ABSENT
COUNCIL PRESIDENT M. C. "BILL" GODWIN

Johnny E Magee
COUNCILMAN JOHNNY E. MAGEE

Lisa Taylor
COUNCIL SECRETARY, LISA TAYLOR

INTRODUCED AND ADOPTED ON THIS 15th. OF NOVEMBER, 1983.

RESOLUTION NO. 1033

RESOLVED, that the City Council of the City of Bogalusa would like to go on record as stating that we are in strong support of the continuation and future improvements of the Pearl River Navigation Project; and

RESOLVED, it appears to the City Council of the City of Bogalusa, acting unanimously herein, that in view of the fact that the City of Bogalusa and surrounding communities are currently experiencing an unemployment rate of twenty-one percent (21%) and since the City of Bogalusa is looking at developing new forms of employment in which one of the most promising appears to be industries locating in Bogalusa desiring the use of water transportation; and

RESOLVED, that there is a possibility of fertilizer being shipped into Bogalusa by barge, an agricultural shipment of grain here from this part of the country being shipped out by barge and also Crown Zellerbach Corporation is most desirous of the possibility of bringing coal for fuel in by barge.

BE IT RESOLVED, that these are just the beginnings of potential uses of this Pearl River Navigation Project and therefore the City Council of the City of Bogalusa would like to go on record as being in strong support of the continuation and future improvements of the Pearl River Navigation Project as being very determined to the future and economic well-being of the citizens of the City of Bogalusa and the surrounding area.

Resolution introduced and adopted on this 1st. day of November, 1983.

M. C. Bill Godwin
H. C. "BILL" GODWIN, PRES.

Mervin E. Taylor
MERVIN E. TAYLOR, VICE-PRES.

William Bailey Jr.
COUNCILMAN WILLIAM BAILEY, JR.

(ABSENT)
COUNCILMAN MICHAEL RICHMOND

Larry J. Galloway Sr.
COUNCILMAN LARRY GALLOWAY

(ABSENT)
COUNCILMAN JOHNNY E. MAGEE

Councilman Reubin Sumrall
COUNCILMAN REUBIN SUMRALL

Lisa Taylor
LISA TAYLOR, COUNCIL SECRETARY

RESOLUTION OF BOGALUSA, LA

RESOLUTION NUMBER: 1156

CITY OF BOGALUSA
POLITICAL SUBDIVISION

JULY 21, 1987
DATE

R E S O L U T I O N

BE IT RESOLVED, by the Mayor and City Council of the City of Bogalusa, State of Louisiana, acting as the governing authority of said City did meet in regular session on this date; and,

THEREFORE, BE IT RESOLVED, at which time the U. S. Corps of Engineers concludes the study of the Lower Pearl River Basin Flow Distribution Study, the Mayor and the City Council of the City of Bogalusa will support the remedial action suggested by said study; and,

THEREFORE, BE IT FURTHER RESOLVED, that said resolution was introduced and adopted on this 21st day of July, 19 87.

H. E. "TOY" TAYLOR, MAYOR
CITY OF BOGALUSA

J. E. "BIG JOHN" MAGEE, PRES.
BOGALUSA CITY COUNCIL

HAROLD L. RITCHIE, COUNCILMAN

DON "SLUE" THOMAS, COUNCILMAN

PAUL D. KATES, COUNCILMAN

MARVIN C. AUSTIN, COUNCILMAN

KENNETH D. WHEAT, COUNCILMAN

RALPH LEE MAY, COUNCILMAN

ATTEST:

LISA TAYLOR, COUNCIL SECRETARY

RESOLUTION OF BOGALUSA, LA

ORDINANCE NO. 1160

AN ORDINANCE authorizing the Mayor of the City of Bogalusa, Louisiana to file an application to the U. S. Corps of Engineers for a Section-10 Permit to design and construct a port and or barge terminal and making said Ordinance Emergency in Nature.

BE IT ORDAINED, by the City Council of the City of Bogalusa, Louisiana, that:

WHEREAS, the Honorable Mayor of the City of Bogalusa, be and he is hereby authorized to execute any and all documents in connection with filing an application with the U. S. Corps of Engineers for a Section-10 Permit to design and construct a port and or barge terminal at the termination of Riverside Drive and the Pearl River; and,

WHEREAS, this matter being one affecting the health, welfare and economic development of the citizenry of the City of Bogalusa and due to the time limitations, this Ordinance be and the same is hereby declared to be Emergency in Nature.

BE IT FURTHER ORDAINED, that all ordinances or parts of ordinances in conflict therewith are hereby repealed.

Mervin E. "Jay" Taylor
MERVIN E. "JAY" TAYLOR, ACTING PRESIDENT
BOGALUSA CITY COUNCIL

Louis Rawls
LOUIS RAWLS, MAYOR
CITY OF BOGALUSA

INTRODUCED AND ADOPTED: November 15, 1983

Lisa Taylor
LISA TAYLOR, COUNCIL SECRETARY

RESOLUTION OF POLICE JURY OF WASHINGTON PARISH

RESOLVED, that the Police Jury of Washington Parish would like to go on record as stating that we are in strong support of the continuation and future improvements of the Pearl River Navigation Project; and

RESOLVED, it appears to the Police Jury of the Parish of Washington, acting unanimously herein, that in view of the fact that the Parish of Washington is currently experiencing an enemployment rate of twenty-one percent (21%) and since the Parish of Washington is looking at developing new forms of employment in which one of the most promising appears to be industries locating in Bogalusa desiring the use of water transportation; and

RESOLVED, that there is a possibility of fertilizer being shipped into Bogalusa by barge, an agricultural shipment of grain here from this part of the country being shipped out by barge and;

BE IT RESOLVED, that these are just the beginnings of potential uses of this Pearl River Navigation Project and therefore the Police Jury of Washington Parish would like to go on record as being in strong support of the continuation and future improvements of the Pearl River Navigation Project as being very determined to the future and economic well-being of the citizens of Washington Parish.

RESOLUTION adopted on this 7th day of April, 1988.

BILLY WAYNE RESTER, PRESIDENT

FAYE CRAIN, SECRETARY

STATEMENT OF VERNON BEHRHORST, PRESIDENT, GULF INTRACOASTAL CANAL ASSOCIATION

ACCOMPANIED BY DALE MILLER, CHAIRMAN OF THE BOARD, GULF INTRACOASTAL CANAL ASSOCIATION

Senator JOHNSTON. Next we are happy to welcome back an old veteran before the committee, I mean a veteran of long standing, Vernon Behrhorst, accompanied by Dale Miller, with the Gulf Intracoastal Canal Association.

Mr. BEHRHORST. Thank you, Mr. Chairman.

Herb Haar is back up here with me. Dale, of course, is chairman of the board, and Colonel Haar is vice chairman of the board.

I am delighted that you put Mayor Taylor right in front of me. I just found out, coming up on the plane with him Saturday, that the Corps had approved the renewal of operation and maintenance on the West Pearl River. I certainly want the record to show that the Gulf Intracoastal Canal Association supports vigorously the reopening of the Pearl, knowing from him and others the immediate benefits that can accrue to this.

If you would permit me, Mr. Chairman, a comment, there is a supporting statement for the Red River Waterway in here, but if I could make this little addition here.

Last year, I completed a study for the city of Alexandria for a port facility there. I am currently involved in a study for the Macabeche Port Commission. I speak directly from experience, and until we get the Red River Waterway at least to Shreveport and the major transportation manufacturing center in there, no way can we realize the significant benefits that we can get from that, and they will even accrue to the people in Alexandria, Macabeche, and everybody below.

Simply a key to this, which has not yet been mentioned, is the establishment of frequent, reliable barge service. Just because you have that doesn't make people use it, but you have to get the frequency of barge service to serve these people, and you will not get that until you reach the key point of Shreveport. We urge this as a tributary to the GIWW as well, so we lend our strong support to that.

Two things, very briefly. The traffic coming down the Pearl River will either go east on the Intracoastal Waterway or west on the Intracoastal Waterway, and that going west will add to the 35 million tons coming through that facility, which already is overtaxed.

Not only do we need to get the study done, but it is one of the five projects that needs accelerated funding, but it will also impact upon Colonel Haar and the Port of New Orleans in doing their long-range planning, and other deep water ports along the Mississippi River, as well as it will be a factor in the development of a coastal resources management plan for Louisiana and that area east of the Mississippi River.

The main thing that I want to bring to your attention is something where we got our act together on recently. Everybody is working in the same direction on somewhat of an emergency issue on the Intracoastal Waterway over at Sergeant, Tex. You have or will get statements from Senators Bentsen and Gramm supporting this funding of the Corps of Engineers' section 216 study to look at the problem of erosion of the Gulf of Mexico coast.

At one place, the Intracoastal Waterway is only 600 feet in the open gulf, and we need to get this study so that we can resolve how the GIWW will be protected in that way. If it is not protected, in a few years it will be the open Gulf of Mexico, and the segment from there to the Mexican border will become useless.

We ask you to see if you can help us to find the funds to initiate this very important study. The rest of this is contained in my statement.

Senator Johnston, this will be my last year as president of the Intracoastal Canal Association. I want to take this opportunity to express to you, and to the rest of the members of the subcommittee, our thanks for being very helpful in achieving what we are trying to do here.

Thank you, and we look forward to seeing the best of success to you in your new venture.

Senator JOHNSTON. Vernon, I did not know that this was your last year as president of the association. I am sorry to hear that and I hope that you will continue to come back annually with us, because you have really done outstanding work for flood control and navigation in not only southern Louisiana, but throughout the whole area.

We, especially in Louisiana, owe you a great debt of gratitude for the great work you have done, and we don't want to overlook what I consider a great resource. I am sorry to hear that you are not going to be president, but I expect to see you back here next.

Mr. BEHRHORST. Mr. Chairman, when I became president it was with the agreement that from now on we would rotate the presidency; you serve 2 years and then let other people take over the chair.

I hope to be around and any time I can be of help, please feel free to call.

Senator JOHNSTON. Thank you very much. Always bring Dale Miller and Herb Harr with you; we like to see them here, too.

Mr. BEHRHORST. Thank you very much, Senator.

Senator JOHNSTON. Thank you.

[The statement follows:]

STATEMENT OF THE GULF INTRACOASTAL CANAL ASSOCIATION

We thank you for the opportunity to again appear before you to lend our support to funding of water resources projects which are vital to our nation. Accompanying me are Mr. Dale Miller, Chairman of the Board, and Colonel Herbert R. Haar, Jr., Vice Chairman of the Board, of the Gulf Intracoastal Canal Association.

Recently, 1986 tonnage statistics for the Gulf Intracoastal Waterway were released. The 107 million tons carried on the Waterway represent an increase of 4.5 million tons over the previous year. This is a most impressive increase in tonnage especially in light of the depressed condition of the petroleum industry along the Gulf Coast. This increase in traffic is the strongest evidence we have for supporting adequate funding for operation and maintenance of the GIWW. Additionally, continuation of funding for the ongoing studies of the GIWW is essential to determine as soon as possible the improvements needed to handle this increasing traffic.

Last year when I appeared before you, I stressed the fact that the GIWW is the one waterway which ties all the waterways of the south and central regions of our nation into a "network." Its importance as a key link in this "network" was underscored recently when I was asked to testify in favor of authorization of the Olmsted Lock and Dam on the Ohio River. I was unable to travel to Washington for testimony, but I wish to assure you that I strongly support the Olmsted project's authorization, and ask you to provide the needed funds for planning and construction when they are requested.

The Olmsted Lock and Dam is one of the five projects which the Inland Waterways Users Board has recommended for accelerated funding. Another one of these five projects is replacement of the existing Industrial Canal Lock at New Orleans. The reevaluation of the previous authorization of a replacement lock needs to be completed posthaste. Most of the 35 million tons of shallow-draft cargo moving on the GIWW between Mobile and New Orleans and points beyond must pass through this antiquated lock, often with long delays which add unneeded cost to the shipment of these cargos. Additionally, planning for the future of the Port of New Orleans and other ports on the lower Mississippi and development of a comprehensive coastal resources management plan for Louisiana's and Mississippi's coast will be affected by recommendations contained in this re-evaluation.

With regard to the Inland Waterways Users Board, I call your attention to its recommendation to defer further construction on the Red River Waterway. The construction contract on Lock and Dam #3 was let last week. When completed, navigation will be extended an additional 40 miles up the Red River, <u>but short of Shreveport</u>, the major manufacturing, transportation and market city on the river. We have only a partial project until it is completed to Shreveport. Leaving this key segment incomplete denies us most of the waterway's benefits. The Red with its connections to the GIWW via the Mississippi and Atchafalaya Rivers will become an important part of our waterway network only when it is completed.

Since we presented our appropriations request to you last year, a serious condition has developed on the GIWW in the vicinity of Bay City, Texas where rapid erosion is gnawing away at the coast, bringing the GIWW precariously close to the open Gulf of Mexico; in one spot only 600 feet away. A hurricane could, within a few hours, oblitorate these last few feet, leaving the segment of the GIWW extending from this point to the Mexican border virtually useless. At the present rate of erosion, it will happen in a few years <u>without</u> a hurricane.

I was privileged to work with the Texas Sea Grant College program in planning and conducting a symposium on this problem. I serve as Principal Investigator for the Ports and Waterways Advisory Services of the Louisiana Sea Grant Grant program. This symposium focused on the urgency of this situation which is highlighted in the attached article from the Waterways Journal (attached for information, and need not be included in the record).

Because of the rapidly changing physical conditions, this segment of the GIWW has been authorized for study under the provisions of Section 216 of the Rivers and Harbors and Flood Control Act of 1970 (P.L. 91-611). Under this authorization, the Corps of Engineers can determine which course of action is the most appropriate to effectively eliminate the possibility of the GIWW being eroded into the Gulf with the dire economic consequences which will accompany such a disaster. The Corps has the capability to undertake the reconnaissance phase of this study during the coming fiscal year provided the $350,000 needed are appropriated. We strongly urge you to provide these much needed funds.

In order to effectively cope with this situation prior to completion of the Corp's study, legislation has been introduced to provide emergency authority to the Corps of Engineers to insure the integrity of the GIWW by means of beach nourishment until a permanent solution can be determined. We support this legislation and request you to provide the needed funds which it is authorized.

When Assistant Secretary of the Army, Robert Page testified before this Subcommittee on March 2, 1988, he advised you that, "In order to respond better to our project partners and Congress, we will implement measures to accelerate the planning and study process." We welcome with open arms this action by Secretary Page, and we will lend our full support to his effort to implement his proposal. The erosion problem we have just presented is a prime example of the benefits that will be realized with the implementation of Secretary Page's proposal.

Attached is a statement supporting the continuation of the project at the mouth of the Colorado River. GICA gives its full support to this project.

This is my last appearance before you as President of GICA. I extend my thanks to you collectively and individually, for the most favorable consideration you have given our requests. Above all, I thank you for the privilege to have been able to join with you in the support of the development of our nations water resources.

STATEMENT OF THE PORT OF BAY CITY AUTHORITY

To save the Subcommittee's valuable time, we have requested the Chairman or President of the Gulf Intracoastal Canal Association to present this statement.

The Mouth of the Colorado River Project on the Texas Gulf Coast was authorized in Sec. 101 of the Rivers & Harbors Act of 1968. The years of planning and waiting were many, but actual construction was begun in 1983.

The U.S. Army Corps of Engineers has requested $2,200,000 for renewed construction of the Project, and this figure is contained in the Administration's Budget recommendations. We urge the Congress to appropriate the requested funds, and we urge the Corps of Engineers to expend every cent on actual construction, not additional planning, so that the entire Project can be expedited to completion. It is an important part of the Gulf Intracoastal Waterway system.

Senator Lloyd Bentsen and Representative Mac Sweeney are fully familiar with the Project and have worked diligently to bring it to completion.

STATEMENT OF DALE MILLER, CHAIRMAN OF THE BOARD, GULF INTRACOASTAL CANAL ASSOCIATION

I am Dale Miller, Chairman of the Board of the Gulf Intracoastal Canal Association. The statement of our Association is being presented by our President, Vernon Behrhorst of Louisiana, but I have asked the privilege of inserting into the record at this point a brief statement of the Port of Bay City Authority in Texas, in behalf of its navigation project, the Mouth of the Colorado River. I am doing so to obviate the necessity of their witnesses coming to Washington and consuming the time of the Subcommittee, when the merits of this project speak eloquently for themselves.

I suggest that the Subcommittee note that: It is a continuing project -- the appropriation that is sought is contained in the Budget, and conforms to the capability of the Corps of Engineers -- the conditions of local cooperation have been accepted -- the project is non-controversial, being supported by both developers and environmentalists.

Inasmuch as the project conforms to all such criteria, I respectfully request the Subcommittee to accord it favorable consideration.

RED AND ARKANSAS RIVER PROJECTS

STATEMENT OF HARVEY BOLLINGER, EXECUTIVE DIRECTOR, REDARK DEVELOPMENT AUTHORITY

Senator JOHNSTON. Next we are pleased to have Harvey Bollinger, executive director of the RedArk Development Authority.

Mr. BOLLINGER. Mr. Chairman, I appreciate again the opportunity to be before you.

One-half of our authority's area is in the Red River and the other half of it is in the Arkansas River, hence, that is where we get our name, and also the reason that I sometimes appear with both of those two groups.

Chairman Johnston, I know that you are aware of the tough times in rural America, and especially in the states that are energy-producing states like Louisiana and Oklahoma, and that is the reason that I am the only one from my area who is here this year.

Things are a little bit rough back home. I am also representing, as a result of that, three other groups: the East Central Water Association, the Poteau-Deep Fork Association, and the Oklahoma Red River Valley Group.

I have submitted written testimony for the record and there is a summary of our request on page 3, and I will not go over each of those projects again because I know we are pressed for time.

Senator JOHNSTON. We hear about those regularly from Congressman Wes Watkins, who is a member of our counterpart subcommittee, or sister committee, over in the House.

Mr. BOLLINGER. I will be visiting with him tomorrow morning. I know that Wes bends your ear quite a bit and we appreciate the good working relationship that you and he have.

CIVILIAN BYPRODUCT RESEARCH PROGRAM

The two things that I do want to quickly touch on, one is an energy activity. The Department of Energy initiated six regional commodity irradiators for research and demonstration projects through their civilian byproduct utilization program. Over the past 2 years, they funded about $5 million annually for that particularly activity.

This year, the DOE budget shows no funds to continue this activity. We are simply asking that an additional $5 million be put into that budget program to fulfill the commitments that they have with regional sponsors so that we can achieve the benefits that we would get from the previous investments.

MILITARY UTILIZATION OF INLAND WATERWAYS

Second, the military utilization of the Inland Waterway is an activity that is becoming more and more important in our particular area, and I think in your area as well.

There were two test movements conducted in 1986, and these were actual movements on the McClellan and Kerr conducted by the Corps of Engineers Tulsa District, primarily by John Sparlin of the Planning Di-

vision. Mr. Sparlin, working with the Oklahoma Army National Guard, on April 1, 1986, conducted a test movement that showed a 64-percent cost savings in using the waterway over other competitive modes of transportation.

That same year, working with the Texas Army National Guard, a movement from Fort Naches, Tex., ran through the Intracoastal Waterway, up the Mississippi, and on up the Arkansas River to Fort Chafee, a distance of 1,000 miles one way, moving 27 engineering pieces of the 211th Engineering Dredge Detachment. It showed again a 73-percent cost savings over other competitive modes of transportation.

In the summer of 1987, the Oklahoma National Guard conducted a second movement, moving 34 pieces of equipment, showing a 50-percent cost savings. Then in June 1987, the largest move to date, the Arkansas National Guard, one way, moved a complete artillery battalion, 164 pieces of equipment, 1,500 miles one way from Fort Chafee down the Arkansas River, up the Mississippi River, up the Illinois River, clear across Lake Michigan to Fort Grayling, Mich. This was the first movement that was actually supported by the Military Traffic Command.

We feel that this activity is showing a new role for the inland waterway system in the United States and it is a very vital and important role. We would like to see more work in this area is done. I think it is important not only to all existing waterways, but especially we are considering the movement of munitions, and with the Red River arsenal, you can see how that might fit into the Red River navigation system as well. We think that it is very important.

We are also aware that at certain times, the Corps of Engineers identifies certain district as centers of expertise as they have done with the Seattle District in the North Pacific Division for hydropower.

We would like to recommend that, based on the established record of leadership and expertise in the area of military us of the waterway, that the Tulsa District of the Southwest Division be established as the official center for expertise regarding the military utilization of the Inland Waterway, and that they be directed by Congress to develop a plan of study for a report to evaluate the full potential of the military utilization for the entire Inland Waterway system under both a peacetime as well as a national mobilization scenario.

Again, we appreciate your working with us in our area, and the time today to visit with you about some very important things.

Senator JOHNSTON. Thank you very much, Mr. Bollinger. I always appreciate your being here.

[The statement follows:]

STATEMENT OF THE REDARK DEVELOPMENT AUTHORITY

Name	Representing*	Profession
Harvey Bollinger	ECWA OK-RRVA PDFA	Executive Director, RedArk

*RedArk - RedArk Development Authority
PDFA - Poteau/Deep Fork Associaiton
OK-RRVA - Oklahoma Delegation of Red River Valley Association
ECWA - East Central Water Association

TESTIMONY SUMMARY

PROJECT	REQUIRED ACTION BY COMMITTEE
1. Civilian Byproducts Utilization Program (DOE)	Fund $5.0 million to continue
2. Water Resources Development Act of 1986	a) Solicit State and local input on cost-sharing guidelines. b) Support legislation to clarify repayment contracts for existing and/or under construction lakes.
3. Military Utilization of Inland Waterways (COE)	Establish Tulsa District as National Center
4. North Deer Creek (SCS)	Fund for FY 89 New Construction Contract.
5. East Central OK Water Supply Study (BOR)	Fund $125,000 to complete in FY 89
6. Parker Lake (COE)	Fund $2,000,000 to continue construction.
7. Lake Texoma Visitor Center (COE)	Fund based on Corps Estimate.
8. Red River Basin Comp. (COE)	Fund $100,000 to complete in FY 89.
9. McGee Creek Lake (BOR)	Fund $5,880,000 to complete, including roads
10. Southeast OK Water Supply (Kiamichi Hydropower Study) (BOR)	Fund $167,000 to complete in FY 89.
11. Denison Dam-Lake Texoma Restudy (COE)	Fund $250,000 to reanalysis
12. Arkansas River & Tribus, South Central & SE Study (COE)	Fund $100,000 to complete in FY 89.
13. Arcadia Lake (COE)	Fund $1,900,000 for construction.
14. Red/Arkansas River Information/Visitor Center (COE)	Fund based on Corps Estimate

Mr. Chairman and Committee members on behalf of the Board of Trustees of RedArk I want to express our appreciation for this opportunity to meet with this committee to discuss what we consider the most crucial question facing our nation, "how do we develop our nation's water resources in order to avoid a national water crisis?" We consider it an honor and a privilege to testify before this committee because we feel that without a strong multi-purpose national water development program, many of the other important aspects of our country's future, including the nation's defense program are really being built on an very unstable foundation. We also consider it a responsibility to work with you and the committee.

The RedArk Development Authority (RedArk) is a public trust established under the laws of the State of Oklahoma for a 21-county area of east central and southeast Oklahoma. The name RedArk is derived from the fact that the area lies immediately between two major water resources, the Red and the Arkansas Rivers. The purpose of RedArk is to undertake the maximum potential development of the area's water and natural resources with the objective of obtaining the maximum potential economic and employment benefits for the people of that area. With this purpose in mind, RedArk is vitally concerned with the development of not only what we consider our area's most vital resource, but also the most vital resource of our great nation--WATER.

East Central and Southeastern Oklahoma is rich in water and natural resources, but this area of Oklahoma has lagged far behind the state and the Nation in capitalizing the untapped potential of its natural resource base. The economic and job development potential of these resources has not as yet been of significant benefit to the people of the project area.

When one looks at the RedArk area and the poor economic and employment conditions that exist, and yet realizes the area is rich in water and natural resources, one has to come to the conclusion that there's no justifiable reason for the situation to exist. It is a realization of this untapped potential that makes it not only a privilege for us to appear before you to testify about water development in this area, but it actually becomes a mandate to do so.

To achieve its principal purpose, RedArk has initiated a comprehensive, multi-purpose, water resource development program. This program includes hydropower development, water supply, recreation, flood control, and water quality activities. In our role as a planning and implementing authority, RedArk works closely with the three citizens water associations in our area: East Central Water Association, Poteau/Deep Fork Association, and the Oklahoma Delegation of the Red River Valley Association.

The Department of Energy has initiated six (6) regional commodity irradiator research and demonstration projects through its Civiliam Byproducts Utilization Program. Oklahoma has been selected for one of the six facilities. RedArk Development Authoirty has signed a letter cooperative agreement with DOE regarding the development of the Oklahoma Agricultural Commodity Irradiator (OKACI).

The Energy and Water Development Appropriations Acts of 1987 and 1988 provided $5.0 million to the Civilian Byproducts Utilization

Program for development of these six facilities. The DOE budget for FY 89 request no funds to continue this program and proposes to transfer the responsibility for completion of the six facilities to state or private sector sponsors. We urge Congress to continue to fund this program at the past level to provide for the completion of the six facilities and thereby realize fully the benefits from previous investments made in the program. We also urge Congress to direct the DOE to provide full indemnification to the six regional sponsors for these research and demonstration projects.

The Water Resources Development Act of 1986 (PL 99-662). PL 99-662 was signed into law by President Reagan on November 17, 1986. Non-federal cost share provisions set forth in this important piece of legislation include:

Flood Control - 25-50%, with a minimum of 5% cash up-front during construction.

Hydro-power - 100%, reimbursable

M & I Water Supply - 100%, up-front during construction of reimbursable with interest.

Agriculture - 35%, up-front or reimbursable

Recreation - 50%, up-front or reimbursable

Fish and Wildlife Enhancement - 0% for national benefits; 25% up-front or reimbursable if benefits are local

Feasibility Level Studies - 50% during the course of the study, with a minimum of 25% in cash - up to 25% may be provided in-kind. (Excludes inland navigation studies involving dams, locks and channels.)

Even though these and other cost-sharing provisions are generally outlined in PL 99-662, there still remains substantial leeway for intrepretation and formulation of guidelines. We highly recommend that the Federal government solicit state and local input towards implementation of equitable and realistic cost-sharing guidelines.

Also Section 932 of PL 99-662 amended the Water Supply Act of 1958 for non-Federal repayment of water supply storage from Corps of Engineer projects (not Bureau of Reclamation) as follows:

Reduced the time frame for non-Federal payback from 50 years from the date a contract was signed (within the life of the project) to 30 years from the date of project completion;

Requires OMR costs to be paid on an annual basis versus when used;

Eliminated the 10-year interest free period for future water supply storage;

Provides for recalculation of the interest rate every five years versus a "fixed" rate computed as of the beginning of the fiscal year in which construction initiated.

PL 99-662's amendment to the Water Supply Act of 1958 grandfathered in existing water supply contracts which had been approved by the Secretary of the Army, but did not address those

contracts which were under negotiation either at existing COE projects or at projects presently under construction. This omission has proven inequitable to those potential non-Federal sponsors who have supported particular reservoir projects and have provided assurances to reimburse the Federal government for water supply storage in accordance with cost-sharing provisions in effect at the time such commitments are made. In effect, this amendment has been interpreted by the COE as making cost-sharing provisions similar to those outlined in Title I of PL 99-662 applicable to uncontracted storage at COE reservoirs that were existing and/or under construction prior to its enactment.

We feel cost-sharing provisions in effect at the time project construction is initiated should be recognized and applied to subsequent water supply storage contracts, including contracts for storage reallocated to water supply in the future. We urge Congress to clarify this issue by supporting formulation of guidelines and/or legislation to this effect.

Last year during our testimony we reported to you, via a slide presentation, the results of two test movements of military utilization of the inland waterways. These two actual movements were conducted on the McClellan-Kerr, because of the activities of the COE-TD, particularly the efforts of Mr. John Sparlin, Chief of the Economic and Social Annalysis Branch of the Planning Division. The Tulsa District worked with the Oklahoma Army National Guard (OKARNG) to conduct the first test movement in April 1986 from Camp Gruber, OK to Ft. Chaffee, AR. This 93 mile trip (one way) resulted in a 64% cost savings. The TD then working with the Texas Army National Guard (TXARNG) conducted a second larger and longer test movement. The 211th Engineering Dredge Detachment, moved 27 engineering equipment pieces from Port Naches, TX to Ft. Chaffee, AR a distance one-way of 1100 miles. This test is even more dynamic with a 73% savings over land modes.

Subsequent to last years report to you several new and exciting activities have taken place. During the Summer of 1987, the OKARNG conducted a second movement of 34 pieces of heavy engineering equipment again from Camp Gruber, OK to Ft. Chaffee, AR. This movement showed a 50% savings over land modes.

Also in June of 1987, the largest move yet was conducted by the Arkansas Army National Guard (ARARNG). This movement was 1500 miles one-way. It involved moving from Ft. Chaffee, AR down the Arkansas River, up the Mississippi River to the Illinois River, then up the entire length of the Illinois River and finally across the entire length of Lake Michigan to Camp Grayling Michigan. This movement included a complete artillery battalion including guns (164 pieces). This movement was totally handled by a commercial barge company and resulted in a 40% savings over the least cost alternative land mode. It was also the first movement supported by the Military Traffic Command.

Plans are already underway for this summer. The OKARNG plans to move 14 tanks from Camp Gruber, OK to Ft. Chaffee, AR. The ARARNG has completed planning on an even larger move from Ft. Chaffee, AR to Camp Atterburg Indiana. This year they will move the same artillary battalion plus a headquarters battery (264 pieces).

Other recent developments of importance are the fact that the OKARNG received just this last month (March 88) four (4) deck barges to be permanently stationed in Oklahoma on the McClellan-Kerr Arkansas River Waterway. The ARARNG is seeking an additional 4-6 barges to be stationed in Arkansas and to be combined with the Oklahoma units to maximize the efforts of both guards.

The Tulsa District has completed the final design of a loading ramp for the National Guard Bureau. This ramp is to be located at Boudinot Safety Harbor, near Camp Gruber OK at river mile 382. The cost of this facility is $260,000. The Little Rock District has completed preliminary plans for a simular ramp at Lock and Dam 13 near Ft. Chaffee AR.

We are aware that the Corps identifies certain districts as centers for expertise such as the Seattle District of the North-Pacific Division for hydropower. We recommend that based on the established record of leadership and expertise in the area of military use of the waterway that the Tulsa District of the Southwestern Division be established as the official Center for Expertise regarding the Military Utilization of the Inland Waterways and that they be directed by Congress to develop a plan of study for a report to evaluate the full potential of the military utilization of the entire inland waterway under both a peace time and time of national mobilization scenarios.

Statement of the East Central Water Association

The East Central Water Association is a voluntary group of citizens banded together in the interest of supporting water development projects and other natural resources development in the east central counties of Oklahoma. The ECWA promotes the orderly development of the area water and natural resources to advance the economic development and future wellbeing of the citizens of the five-county area. These Oklahoma counties are: Coal, Hughes, Pontotoc, Pottawatomie and Seminole.

The five counties which comprise the East Central area have a combined population as in the 1980 census of approximately 134,000 people. This five-county area is the most rapidly growing area in southeastern Oklahoma. It is area which is not only experiencing significant population growth but also major expansion in the manufacturing and industrial sectors. Cities in these east central counties, such as Ada, Shawnee, Tecumseh, Seminole, Wewoka, Coalgate and Holdenville are in extreme need of an adequate municipal and industrial water supply.

However, at this time, there are no existing, under construction or authorized Corps of Engineers or Bureau of Reclamation lakes within the east central area. In fact, there are not any lakes which have a significant water supply storage capability within the area. Water rationing has been an regular occurrence over the past several summers for nearly all the communities within this area. This critical need for future water supply is clearly demonstrated by the competition for the municipal and industrial water supply storage to be provided by the proposed Parker Lake located in the northern part of Coal County.

The East Central Water Association adopted the following resolutions (A through C) and hereby ask that this subcommittee consider the request of each. The membership and area represented by the East Central Water Association thanks you for your attention and the opportunity to testify before this subcommittee.

RESOLUTION A
NORTH DEER CREEK WATERSHED

WHEREAS, the Soil Conservation Service (SCS) has completed the Watershed Plan and Environmental Impact Statement for the North Deer Creek Watershed; and,

WHEREAS, said plan consists of the the following project measures: (1) multipurpose structure for retarding flood water and for municipal, industrial and recreation water storage; (2) recreation facilities; and (3) mitigation measures, AND FURTHERMORE the total project cost is estimated to be $15,091,210 of which $3,223,680 will be provided from PL 83-566 funds and the remaining $11,867,530 from other funds, AND FURTHERMORE the project has a benefit-cost ratio of 1.06:1; and,

WHEREAS, the Cleveland County Conservation District, Oklahoma County Conservation District, Shawnee Conservation District and Pottawatomie County Development Authority, as local sponsors, have agreed to the plan and proposed cost sharing agreements.

WHEREAS, this plan has been approved by the Secretary of Agriculture and the Office of Management and Budget (OMB); AND FURTHERMORE, the House Committee on Public Works and Transportation and the Senate Committee on Environment and Public Works have authorized the project.

NOW THEREFORE BE IT RESOLVED, the East Central Water Association (ECWA) strongly supports this project and requests OMB to approve this project as a new construction start in 1989 and BE IT FURTHER RESOLVED that the ECWA requests the HOUSE AND SENATE APPROPRIATIONS COMMITTEES to include sufficient funds to construct this project in the 1989 appropriations for the PL 83-566 program; AND BE IT FURTHER RESOLVED the ECWA requests the Washington office of the USDA-SCS to apportion sufficient funds for said project to Oklahoma and that the Oklahoma State Office of the USDA-SCS establish this as its first priority for PL 83-566 funds within the State of Oklahoma in order for construction of the North Deer Creek Watershed to begin as soon as possible.

EAST CENTRAL OKLAHOMA WATER SUPPLY STUDY

WHEREAS, the Bureau of Reclamation was authorized to conduct this study by PL 93-360, dated July 16, 1984, entitled "Appropriations for Energy and Water Development for FY 1985", AND FURTHERMORE the Energy and Water Development Appropriations Act, 1988, provided funds for the continuation of this study; and,

WHEREAS, the purpose of this study is to serve as a guide toward the most beneficial development of the water and related land resources for municipal and industrial (M&I) water supply system, hydroelectric power, navigation, irrigation, flood control, recreation, and environmental enhancement purposes, AND FURTHERMORE, that this study covers all or parts of Coal, Hughes, Lincoln, Okfuskee, Pontotoc, Pottawatomie and Seminole counties, an area of Oklahoma in which there are NO existing, under construction or authorized Corps of Engineers or Bureau of Reclamation lakes or any lakes with a significant water supply storage capability; however an area in which such cities as Ada, Shawnee, Tecumseh, Seminole, Wewoka, Coalgate and Holdenville are in extreme need of an adequate M&I water supply and where water

rationing has been a regular ocurrence over the past several summers; and,

WHEREAS, the proposed FY 89 Federal Budget for the Upper Colorado and Plains Region of the Bureau of Reclamation includes funds for the completion of this study.

NOW THEREFORE BE IT RESOLVED, the East Central Water Association (ECWA) strongly supports this study effort and requests that Congress appropriate $125,000 the FY 89 Energy and Water Appropriations Act for the completion of this study as for the completion of this study.

PARKER LAKE, OKLAHOMA

WHEREAS, the Corps of Engineers completed an Interim Survey Report on Parker Lake in 1975 as an early action project recommended in the Red River Below Denison Dam Comprehensive Basin Study, AND FURTHERMORE, the project was recommended for construction by the Chief of Engineers (OCE) in his 30 May 1980 report; AND FURTHERMORE, a report recommending the construction of the project was approved by the Office of the Secretary of the Army (OSA) and transmitted to the Water Resources Council on 15 January 1981 and was returned to the Assistant Secretary of Army (CW) in October 1981 as a result of the Water Resources Council being discontinued, AND FURTHERMORE, said report with a recommendation to construct the project was transmitted to the Office of Management and Budget (OMB) on the 25 April 1985 by the Assistant Secretary of the Army (CW).

WHEREAS, said report recommends Parker Lake as a multipurpose project on Muddy Boggy Creek which would provide protection against the standard project flood, and a dependable water supply of 42 million gallons per day for municipal and industrial (M&I) purposes, recreation lands for future use, and fish and wildlife mitigation AND FURTHERMORE, the total project cost is estimated at $50,200,000 and has a benefit-cost ratio of 1.1:1; and

WHEREAS, the Parker Lake project was authorized for construction by PL. 99-88, 15 August 1985 (FY 85 Supplemental Appropriation.)

WHEREAS, the Congress reaffirmed a Federal interest in the construction of Parker Lake by including its authorization in Title VI of the Water Resources Development Act of 1986, (Oct. 1986); and,

WHEREAS, the Energy and Water Development Appropriations Act, 1988, provided $5,000,000 for the General Construction efforts on Parker Lake, AND FURTHERMORE, the proposed FY 89 Federal Budget includes funds to continue construction.

NOW, THEREFORE BE IT RESOLVED, that the East Central Water Association (ECWA) request Congress to provide funds in the FY 89 Energy and Water Development Appropriations Bill in the amount of $2,000,000 to continue the construction of Parker Lake as per the direction of Congress in the Water Resources Development Act of 1986.

STATEMENT OF THE RED RIVER VALLEY ASSOCIATION

OKLAHOMA DELEGATION - RED RIVER VALLEY ASSOCIATION TESTIMONY

Mr. Chairman, 12 of the 21 counties in the RedArk area lie within the Red River Basin. We in Oklahoma are concerned with several projects in the Red River Valley. This is appropriate since almost half of the State of Oklahoma is in the drainage basin of the Red River. We, as the Oklahoma Delegation, represent one of the four states which are members of the Red River Valley Association. In fact, I serve on the Board of Directors of the Association. The Red River Valley Association is a voluntary group of citizens banded together to advance the economic development and future well-being of the citizens of the four state Red River Basin area in Arkansas, Louisiana, Oklahoma and Texas.

The Association has for 63 years done notable work in the support and advancement of a program to develop the land and water resources of the valley to the beneficial use of all the people. To this end, the Red River Valley Association offers its full support and assistance to the various Port Authorities, Chambers of Commerce, Economic Development Districts and other local governmental entities in developing the river basin.

The resolutions contained herein were developed by the Oklahoma Delegation of the Red River Valley Association (OK-RRVA) and represent the combined concerns of the citizens of the Oklahoma portion of the Red River Basin as they pertain to the goals of the Association, specifically:

....Economic and Community Development
....Flood Control
....Bank Stabilization
....A Clean Water Supply for Residential, Commercial, Industrial and Agricultural Use
....Solar and Hydroelectric Power Generation
....Navigation

The OK-RRVA is aware of the constraints on the Federal budget, and have kept those restraints in mind as the resolutions were adopted. Therefore, and because of the far-reaching regional and national benefits addressed by the various projects covered in these resolutions, we urge the members of Congress to review the materials contained herein and give serious consideration to funding the projects at the levels requested.

RED RIVER BASIN COMPREHENSIVE STUDY RESOLUTION

The Red River Basin Comprehensive Study, authorized by PL 98-63, 30 July 1983, was initiated in October 1983. A reconnaissance report was submitted in March 1985 by the Tulsa District of the Corps of Engineers for the Oklahoma portion of the Basin. Feasibility studies for the Oklahoma portion are underway at full Federal expense, as directed by Congress, with completion scheduled for January 1989.

The comprehensive study will recommend measures for: flood control, development of water supply, treatment and conveyance facilities, generation of hydro-electric power, development and

enhancement of the recreational potentials and enterprises of the region, and improvement of the rivers for navigation and port site development. The study will also address which features of a comprehensive plan could best be acomplished by Federal, State, local entities and private interests.

The OK-RRVA agrees with the position Congress has taken regarding cost-sharing on this project. We appreciate the support which this project has received from your subcommittee since its authorization. It is vitally important to our area. OK-RRVA requests that Congress provide the funds to complete this study at full Federal funding in the amount of $100,000 in FY 89.

McGEE CREEK RESOLUTION

McGee Creek Lake was authorized for construction, operation, and maintenance in accordance with Federal Reclamation Laws by PL 94-123, September 28, 1976. McGee Creek Lake is located in Atoka County in Southeastern Oklahoma. McGee Creek is a northern tributary of the Red River. The damsite is about 3.4 miles about the confluence of McGee and Muddy Boggy Creeks. The project was authorized for water supply, flood control, and recreation. Construction began on the project in June 1982.

The OK-RRVA strongly supports continuation of this project, and the concept demonstrated in the project of maximum development of the local economy by maximum utilization of opportunities provided by the project's development. The Association recommend the members of the McGee Creek Authority to continue to cooperate with the basin interests to fully develop the economic potential of this project for the benefit of the project area and the nation.

The dam is nearing completion with the entire project scheduled for completion in FY 89. In order to complete this project on schedule and to fully realize the previous investment, OK-RRVA is asking that $5,880,000 be provided to complete this project in FY 89, including all roads which are associated with the project. We also ask that the Bureau be instructed to utilize these funds entirely and only on the McGee Creek project.

SOUTHEAST OKLAHOMA WATER SUPPLY STUDY AND
KIAMICHI HYDROPOWER STUDY

The Bureau of Reclamation was authorized to conduct these two (2) studies by PL 93-360, dated July 16, 1984, entitled "Appropriations for Energy and Water Development for FY 85". These studies are companion studies being done by the Bureau as input to the Corps' Red River Comprehensive Study. They are scheduled for completion by January 1989. The FY 89 budget includes funds for the completion of these studies as scheduled. OK-RRVA asks that $ 167,000 be provided in FY 89 to complete these two studies.

DENSION DAM-LAKE TEXOMA RESTUDY

The Denison Dam - Lake Texoma project was completed in 1944. Authorized project purposes included flood control, hyroelectric power generation, navigation, regulation of the flow of the Red River, and other beneficial purposes. A total of 150,000 acres-

feet of storage is presently allocated for water supply, although it was not an original project purpose. Legislation authorizing the Secretary of Army to reallocate an additional 300,000 acre-feet of hydropower storage to water supply storage was included in the Water Resources Development Act (WRDA) of 1986. designation of recreation as a project purpose was also included in the WRDA of 1986.

Authority for a restudy was provided in resolutions adopted by the U.S. Senate Public Works Committee in 1960 and 1965. The purpose of the restudy is to determine whether it would be advisable to modify the existing project giving consideration to future water resource needs of the area. These include recreation, irrigation, municipal and industrial water supply, aditional hydropower, sediment control, and other purposes in addition to the authorized purposes.

The scope of the study was expanded by the Energy and Water Development Appropriations Act of 1988 to include consideration of atlernatives for improving management and utilization of water resources of the Red River Basin at and above the Denison Dam including the feasibility of additional reservoirs upstream of Denison Dam and direct current interconnections between the Southwest Power Pool and the Electric Reliability Council of Texas. Fiscal year 88 funds were used to initivate these additional studies.

The RRVA requests that $250,000 be provided in the FY 89 Energy and Water Appropriations Bill for the COE to carry out the restudy of Lake Texoma including a joint study effort with the Bureau of Reclamation.

LAKE TEXOMA VISITOR CENTER, OKLAHOMA

The Energy and Water Appropriations Acts of 1987 and 1988 included funding for the establishment of a Visitor Center at Lake Texoma near the Lake Texoma State Lodge and Park. This center was to provide facilities to house some existing Corps personnel stationed at Lake Texoma as well as State and local personnel involved with the management, promotion, and operation of recreation and tourism activities at Lake Texoma. State and local personnel were to be totally responsible for the operation of the Visitor Center thereby requiring no additional Corps personnel.

We understand that the Tulsa District has been directed by higher authority to develop the project for only Corps personnel. The elemenation of a provision for State and Local personnel will either (1) require an addition to the Corps staff at the lake to perform the functions which State and Local personnel were going to perform or (2) result in the facility not accomplishing its mission as a visitor center. Also since State and Local entities have been approached by the Corps to cost share (50/50) the construction of this facility as a recreation component of the lake, it only appears reasonable that the facility should be designed to house both Federal and non-Federal personnel necessary for its operation. We therefore ask that Congress direct the Corps to implement this project as originally authorized to include facilities to house Corps, State and Local personnel and to provide FY 89 funds based on the Corps estimate necessary to construct the facility.

STATEMENT OF THE POTEAU/DEEP FORK ASSOCIATION

The Poteau/Deep Fork Association (PDFA) is a voluntary citizens' group interested in supporting water development projects and other natural resource development in the 10 counties of Oklahoma impacted by the Poteau and Deep Fork Rivers. These counties are: LeFlore, Haskell, Latimer, Pittsburg, McIntosh, Okmulgee, Okfuskee, Lincoln, Creek and Oklahoma. These 10 counties have an combined population of 816,000. The PDFA was formed for the purpose of promoting the orderly development of the water and natural resources in these two river basins.

The Deep Fork River is a tributary of the Canadian River; forms one of the major arms of Lake Eufaula, an existing COE multipurpose project; and ultimately empties into the existing McCellan-Kerr navigation channel on the Arkansas River. The river originates in the central part of Oklahoma near Oklahoma City. It is 220 river miles long with an average fall of two feet per mile. The channel is crooked and filled with obstructions. Flooding occurs because of inadequate channel capacity caused by much of the watershed having channel slopes as flat as one foot per mile and average velocities as low as one foot per second. These conditions allow flood flows to escape the channel, fill the lowlands, and deposit the sediment load which results in additional flattening of these lower reaches. Over time the flood area is expanded because of the sediment deposition. Average annual damages of crops and structures is over $200,000.

The flood plain has additional problems. Due to the high sediment load of the river and poor natural drainage, levees have formed adjacent to the river. These levees trap flood waters and do not allow drainage once the flood waters have subsided. There are 34,000 acres of potential farmland that remains wet for many months. It is important to note that these are not natural wetland areas but have been formed throughout the years as a result of man's activities in the basin and his lack of conservation and resource management programs. These conditions result in the overgrowth of trees and brush and make otherwise prime farmland unsuitable for agricultural purposes.

The Poteau River drains an area of about 1,900 square miles in eastern Oklahoma and western Arkansas. The drainage basin, which is about 1.2 percent of the drainage area of the Arkansas River, is roughly rectangular in shape and is mountainous. There are approximately three billion tons of coal reserves located in the basin and they are being mined at an increasing rate. In addition, approximately one million bushels of soybeans are produced each year in the area. Expanding industrial activity in the basin; especially near Ft. Smith, Arkansas and in LeFlore County, Oklahoma; are placing increasing demands on the area's ability to provide an ample quantity and satisfactory quality of municipal and industrial water. Three major industrial facilities have moved to LeFlore County recently. One facility currently under construction, a co-generation plant, will employ 1,200 people during the four-year construction period and 130 people for the life of the plant's operation. This plant will consume approximately one million tons of coal per year.

Navigation in this area is not a new concept. It was championed in the latter 1950s by the late Senator Robert S. Kerr as an original part of the McCellan-Kerr Navigation System to serve the major industrial center of Oklahoma City and the vast agricultural grain industry of western Oklahoma and the Texas

panhandle. A report showing the project to be economically feasible was forwarded by the Tulsa District to the southwest division and hence to the Office of Chief of Engineers in the early 1960s. Unfortunately, the Board of Engineers for rivers and harbours rejected the report on the grounds that Tulsa District had over estimated shipments of petroleum products and coal that would be carried by the waterway. The project was then dropped. It is important to note that although this project did show an economc feasibility at one time, it was a single purpose (navigation) project.

The Oklahoma Water Resources Board recently completed a state water plan which included a project to transfer excess flood waters from the Robert S. Kerr Lake, a part of the existing navigation channel on the Arkansas River, to the water deficient areas in metropolitian Oklahoma City and the tremendously productive agricultural areas of the high plains of Oklahoma. The agriculture of this area is heavily depended upon irrigation and is in jeopardy because of the eight-state ogallala ground water aquafer. Although technically feasible, the project did not prove economically feasible under current conditions and evaluation criteria. This plan called for water to be transported by non-navigation canals, fish stations and aqua ducks along a route closely paralleling the proposed navigation route. Again, this project was designed and evaluated as a single purpose project (water supply). To maximize the potential of this water resource, we must quit looking at it as single purpose projects and consider it from a multipurpose standpoint. This multipurpose approach would include ways of combining navigation and water supply plans as well as other purposes such as hydropower, recreation and flood control.

Several efforts are underway in the PDFA area to develop solutions for the problems and needs just presented. The following resolutions represent the PDFA's position regarding each of these efforts. The membership of the PDFA respectfully ask that your subcommittee honor the requests contained in these resolutions. Thank you for your time, attention, and continued support.

RESOLUTION I

POTEAU/DEEP FORK COMPREHENSIVE STUDY, OKLAHOMA

The Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study (authorized by PL 98-63, 30 July 1983) was initiated in October 1983. A reconnaissance report was completed by the Corps of Engineers in March, 1985. Feasibility studies are underway at full Federal expense, as directed by Congress, with completion scheduled for January, 1989.

The feasibility studies are concentrating on multiple-purpose development, including flood control and navigation. Navigation studies include the evaluation of the potential for extending navigation from the McClellan-Kerr Arkansas River Navigation System through Lake Eufaula to the McAlester, Oklahoma area and extension of navigation on the Poteau River to the vicinity of Panama, Oklahoma, is being reevaluated. Other specific items under study include combining a water conveyance system with the Deep Fork navigation plans, modification to Wister Lake and multipurpose projects which may be needed for the navigation/water conveyance plans.

The comprehensive study will recommend measures for: flood control; development of water supply, treatment and conveyance

facilities; generation of hydroelectric power; development and enhancement of the recreational potentials and enterprises of the region; and improvement of the rivers for navigation and port site development. The study will also address which features of a comprehensive plan could best be accomplished by Federal, State or local entities and private interests.

The PDFA agrees with the position Congress has taken regarding no cost-sharing on this feasibility study. We appreciate the support which this project has received form your Subcommittee since its authorization. It is vital to our area. PDFA requests that Congress provide the funds to complete this study at full Federal funding in the amount of $100,000 in FY 89.

RESOLUTION II

ARCADIA LAKE, OKLAHOMA

Arcadia Lake is located at mile 213.8 on the Deep Fork River; in the metropolitian area of Oklahoma City and Edmond, Oklahoma; about one and one-half miles west of Arcadia, Oklahoma. Arcadia Lake was authorized by the Flood Control Act of 1970 for the purposes of flood control, water supply and recreation. Construction on the COE lake began in September 1980. The total estimated cost is $89.7 million. The entire project is about 90 percent complete. Impoundment was initiated in November 1986 and the project is scheduled for completion in December, 1991. The City of Edmond, as a local sponsor, has signed contracts with the Corps to repay the cost of water supply and one-half the separable recreation costs.

The PDFA wants to go on record as being a strong supporter of the continued funding for the construction of the Lake Arcadia project. We therefore request that this Committee appropriate $1,900,000 to the Corps to continue the construction of this project in FY 1989.

RED AND ARKANSAS RIVER BASINS INFORMATION AND VISITOR CENTER
LAKE EUFAULA, OKLAHOMA

The Energy and Water Appropriations Act of 1988 included funds for the establishment of an Information and Visitor Center on Lake Eufaula in the Crowder Point East Recreation Area. This center was to provide facilities to house State and local personnel involved in providing recreation, tourism and general water resource information and educational materials and programs necessary to accomplish the facilities mission. This would eliminate the need for additional Corps personnel to operate the facility.

We understand that the Tulsa District has been directed by higher authority to develop the project to house only Corps personnel. The elimination of non-Federal personnel will require addition Corps staff and therefore increase the Federal cost of operating the project. Also since non-Federal entities have been approveded by the Coprs to cost share (50/50) in the construction of this facility as a recreation component of the area water resource, it only apprears reasonable that the facility provide for non-Federal personnel necessary for its operation to accomplish its established mission.

We therefore ask that Congress direct the Corps to proceed with this project as originally authorized to include non-Federal personnel and to provide the additional funds in FY 89 necessary to construct the project as per Corps estimates.

STATEMENT OF TOMMY THOMSON, CHAIRMAN, ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Senator JOHNSTON. Finally, we want to welcome Tommy Thomson, chairman of the Arkansas River Basin Interstate Committee.

Mr. THOMSON. Mr. Chairman, I truly appreciate the opportunity to be the last witness today.

The gentleman who spoke just before me took part of our testimony. As a matter of fact, if you will look at the Oklahoma and Arkansas statements of the Interstate Committee, they talk about the military movements. So, we certainly endorse that.

Mr. Chairman, omens, I think, always speak well, and this afternoon my Senator, Bill Armstrong, who introduced me, happened to be sitting next to Senator Bumpers from Arkansas, and that tells the story as it did over in the House this morning. Congressman Hammerschmidt of Arkansas was the leadoff speaker from the House side and my three Congressmen from Colorado followed.

That is what the Arkansas River is. It starts as a small stream in Colorado and it ends up as a mighty river emptying into the Mississippi River, and the five states work very closely together.

I have my colleagues in the audience, and normally I have to ask them to stand because they are surrounded by so many others, but there they are, and they do represent the five states. Unfortunately, our Missouri representative was not able to be here, but as you know, Mr. Chairman, the Governors of each of our five states appoint five from our state and we serve together as a very cohesive group, to work together on our testimony and to present a consolidated statement.

I submit, and I request, Mr. Chairman, that the individual statements be received and be made a part of the official record.

Senator JOHNSTON. It is so ordered.

Mr. THOMSON. On behalf of the association, Mr. Chairman, I would like to thank you and your colleagues, and all of your predecessors, for the wisdom and the support and the strength that you and your colleagues have provided in water resource matters down through the years.

I have heard the testimony in these last few days. I have been coming back to testify for 22 years in my present capacity and since 1956 in previous capacities.

I would dread to think, Senator Johnston, what condition this country would be in today were it not for the wisdom that you and your colleagues have shown by providing funds for water resource projects, whether they be reservoirs to retain water during times of surplus, whether they be navigation ways, whether they be recreation, whether it be water for agriculture it is a combination of waters that flow. We express to you, sir, and your colleagues, our profound and sincere thanks.

That is our testimony. [Applause.]

Senator JOHNSTON. Thank you very much, Mr. Thomson. We appreciate those good words.

We do very strongly believe on this committee that waterways represent the infrastructure of the country on which the economy is built. We all want to balance the budget and save money, but those few little dollars, and they are a very minuscule part—less than one-half of 1 percent of the entire federal budget, represent an investment in this country which is of inestimable value and which we dare not let atrophy and wither away. It is a very important thing and we appreciate your saying that.

Mr. THOMSON. Thank you, sir.

Senator JOHNSTON. Thank you very much.

[The statement follows:]

STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE

Mr. Chairman, and members of this distinguished Committee, I am Charles L. Thomson, from Pueblo, Colorado. I have the pleasure and honor this year of serving as Chairman of the five state Arkansas River Basin Interstate Committee. It is truly an honor and pleasure to appear before you and the distinguished members of your Committee today.

The Arkansas River Basin Interstate Committee consists of five delegates from each of the states of Arkansas, Colorado, Kansas, Missouri and Oklahoma, who were appointed to represent those respective states by their Governors. It is our responsibility to coordinate water resource matters among the states, and to speak for the Arkansas River Basin in appearances before Committees of Congress and regulatory agencies.

I am accompanied here today by members of the Interstate Committee, and, in order to save the valuable time of your Committee, I would request, Mr. Chairman, that they not be introduced individually, but rather stand as a group signifying the strong bond of support which water officials from the five states have developed.

As Chairman, I will be the spokesman for the Committee. I respectfully request that the copies of each state's individual statement be made a part of the record, along with this summation.

The Interstate Committee urgently recommends that Congress establish economic development as a national priority to include the use and development of our nation's waterways. During the past two years, the Department of Defense has utilized various segments of our navigation system to move troops and equipment, and has found the results to be very successful, not only in mobility, but also in cost savings. We strongly recommend that this aspect of the National Defense System be recognized and encouraged.

The budget submitted by the Administration for FY 1989 contains a number of flood control projects in the five states, and we strongly recommend the approval of funds requested. You will also note in testimony submitted by the individual states, requests for additional funding for specific projects which we feel, collectively, are essential. Of particular importance are the individual flood control projects in the individual states. I call your attention to the statement submitted by Mr. Houston Adams, Chairman of the State of Oklahoma delegation, who cites the historic flood which occurred in 1986.

We thank the Committee and other members of the Congress for their assistance in the continuation of the construction authority for the McClellan-Kerr Arkansas River Navigation Project until the remaining problems identified by the Corps of Engineers have been satisfactorily resolved, specifically, the completion of the removal of the high rock in the pool formed by Murray Lock and Dam and the construction start of the extension of the Arkansas/White River cut-off, are provided for in the President's budget. The detailed engineering for the needed repairs at Dam 2 to provide for its safety are continuing. The studies of the much needed structure at the mouth of the White River to alleviate what has become an annual low water problem, should be completed as quickly as is possible. The annual expense for dredging and disposal in this area is growing and needs to be reduced.

Mr. Chairman, and members of the Committee, this makes my 22nd year to appear before this distinguished Committee, and I want to again sincerely and respectfully thank you and all of your predecessors for the wisdom you have demonstrated down through the years as to the importance of investments in Water Resource Programs and Projects. Each of the water projects which have been authorized and funded by the Congress of the United States, and constructed by either the Army Corps of Engineers or the U.S. Bureau of Reclamation, has helped provide water management capabilities which have helped make our country strong and great. We would dread to think of the water resource problems which would face this nation today were it not for the wisdom you and your colleagues have provided each and every year.

STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE—ARKANSAS

Mr. Chairman and members of the Committee, my name is Wallace Gieringer. I serve as Executive Director of the Pine Bluff-Jefferson County Port Authority and Arkansas Chairman of the Interstate Committee. Other Committee members representing Arkansas are Messrs. Wayne Bennett, farmer from Lonoke; Charles Maynard, banker from Little Rock; Douglas W. Parker, attorney from Fort Smith; and Charles L. Steel, electric utility executive from Little Rock. We fully endorse the statement presented to you today by the Chairman of the Arkansas River Basin Interstate Committee.

We appreciate the opportunity to testify before your most important subcommittee. Certain projects in our region are vital to the economic well-being of the region and our nation. We strongly recommend that you favorably consider the following in your budgetary deliberations.

* Support for all funding included in the President's budget for the construction, operation and maintenance of the McClellan-Kerr Arkansas River Navigation System.

* Continuation of construction authority for the McClellan-Kerr Arkansas River Navigation Project until the remaining problems identified by the Little Rock District Corps of Engineers have been satisfactorily resolved. These include:

  ** studies of the much-needed structure at the mouth of the White River to alleviate what has become an annual low-water problem (the annual expense for dredging and disposal in this area is growing and needs to be reduced);
  ** completion of the removal of the high rock in the pool formed by Murray Lock and Dam;
  ** the construction start of the extension of the Arkansas-White River cut-off structure;
  ** detailed engineering for the much-needed repairs at Dam 2 to provide for its safety; and
  ** studies to determine if additional real estate is needed along the navigation system to allow the system to operate as originally designed.

* Funding to complete the important Arkansas River Basin Study to resolve problems related to navigation; flood reduction; and municipal, industrial and agricultural water supply for which the States of Arkansas and Oklahoma entered into cost-sharing contracts. The study would include navigation channel enlargement in Lake Langhofer and Lake Dardanelle.

* We request that the Congress go on record recognizing a Federal interest in authorization and funding of off-channel harbors in accordance with "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (dated March 1983) for regular feasibility and Section 107 navigation projects. The current policy is contributing to reduced economic growth in already economically depressed areas of our nation. This urgently needs to be corrected as slackwater harbors contribute to economic development, tax revenues, and reduced transportation costs while enhancing our nation's competitive posture in a global economy.

* We urge the Congress to encourage the Military Management Command to identify opportunities to use the nation's navigable waterways which can be important to our nation's economic development and defense posture and have a positive effect on our nation's budgetary problems.

When the McClellan-Kerr project was constructed, the Corps of Engineers did not excavate the Arkansas-White Canal to its full depth as it was not needed 20 years ago. The growth of sediment deposits require excavation of the canal to its full depth permitting the Corps to operate Pool 2 as it does the other pools in the system to move sediments through the system and thus reduce the annual dredging costs as well as the problems associated with its disposal. Accordingly, we request the committee to provide operation and maintenance funds for this operational activity to be started in FY 89.

We continue to be concerned that recently expanded non-Federal cost-sharing requirements are resulting in limiting participation in Federal water programs to wealthy communities. The poorer areas of our nation which have the greatest need and potential for growth - but limited tax base - will be unable to participate because they cannot even meet the study cost- sharing requirements.

Finally, Mr. Chairman, we respectfully believe that rules applying to the naming of waterway structures for members of Congress during a member's lifetime should apply equally for those dedicated and distinguished Americans whose tireless efforts have resulted in development of the structures.

We thank you for the privilege of speaking to you today and urge you to favorably consider our request.

STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE—OKLAHOMA

We urge Congress to insure that the construction account of the McClellan-Kerr Arkansas River Navigation System remain open. Serious problems have arisen at the entrance to the navigation system. Extensive testing has proved that a structure (lock and weir) will be necessary to correct the problem. This problem must be corrected quickly and cannot stand the time consuming delays of new appropriations if the construction account is closed.

Of particular interest, given today's economy and the budget constraints under which the Defense Department is being required to operate, is the military's use of the inland waterways. It has been with unrelenting effort of some regional organizations that some rather extensive test moves of National Guard equipment have been accomplished in the past year at substantial savings to the military. It is in this light that we ask Congress to provide the funds necessary to the National Guard Bureau specifically to build permanent dock facilities at those installations along the inland waterway system, where a real efficiency can be gained from their use.

Of further interest is funding for authorized projects including $2,000,000 for Parker Lake; $6,200,000 for Mingo Creek, Tulsa, Oklahoma; and $500,000 for Fry Creeks, Bixby, Oklahoma. Funding for flood control studies in the budget are needed for the Arkansas River in the reach from Keystone Dam to Tulsa; Caney River in the vicinity of Bartlesville, Oklahoma; Grand (Neosho) River, Miami, Oklahoma; North Canadian River above Oklahoma City, Oklahoma; the Arkansas River Basin Feasibility Study, Arkansas and Oklahoma; the Red River Comprehensive Study; and the Arkansas River, South Central, Southeast Comprehensive Study, as authorized in the 1983 Supplemental Appropriations Act (P.L. 98-63).

Mr. Chairman and members of the Committee, I am Houston Adams, Oklahoma Chairman of the Arkansas River Basin Interstate Committee, from Tulsa, Oklahoma.

It is my privilege to present this statement on behalf of the Oklahoma members of our Committee in support of adequate funding for water resource projects in our area of the Arkansas Basin. Other members of the Committee appointed by the Governor are: Mr. E. R. Albert, Jr.; Mr. Robert S. Kerr, Jr.; Mr. Harold B. Scoggins; and Mr. Fred G. Turner.

Together with representatives of the other Arkansas Basin states, we fully endorse the statement presented to you today by the Chairman of the Arkansas River Basin Interstate Committee.

We appreciate the opportunity to present our views of the special needs of our State concerning several studies and projects.

We are particularly pleased that the President included in his budget funds to advance work for flood control. Our State was devastated by the flood of October, 1986. It caused about 300 million dollars in property damage. Projects completed to date prevented about an additional 700 million dollars in damage that would have occurred without that protection. Of special interest is funding for authorized projects including $2,000,000 for Parker Lake; $6,200,000 for Mingo Creek, Tulsa, Oklahoma; and $500,000 for Fry Creeks, Bixby, Oklahoma. Funding for flood control studies in the budget are needed for the Arkansas River in the reach from Keystone Dam to Tulsa; Caney River in the vicinity of Bartlesville, Oklahoma; Grand (Neosho) River, Miami, Oklahoma; North Canadian River above Oklahoma City, Oklahoma; the Arkansas River Basin Feasibility Study, Arkansas and Oklahoma; the Red River Comprehensive Study; and the Arkansas River, South Central, Southeast Comprehensive Study, as authorized in the 1983 Supplemental Appropriations Act (P.L. 98-63). We also support funding for the Small Flood Protection Program, Section 205, 1948 Flood Control Act, as amended. Funds are needed under that program for local flood problems along Sam Creek, Muskogee, Oklahoma; Merkle Creek, Norman, Oklahoma; Blackboy Creek, Tulsa, Oklahoma; and many other problems within our State.

Of particular interest, given today's economy and the budget constraints under which the Defense Department is being required to operate, is the military's use of the inland waterways. It has been with unrelenting effort of some regional organizations that some rather extensive test moves of National Guard equipment have been accomplished in the past year at substantial savings to the military. It is in this light that we ask Congress to provide the funds necessary to the National Guard Bureau specifically to build permanent dock facilities at those installations along the inland waterway system, where a real efficiency can be gained from their use.

We urge that Congress insure that the construction account of the McClellan-Kerr Arkansas River Navigation System remain open. Serious problems have arisen at the entrance to the navigation system. Extensive testing has proved that a structure (lock and weir) will be necessary to correct the problem. This problem must be corrected quickly and cannot stand the time consuming delays of new appropriations if the construction account is closed.

There are six projects omitted from the Federal budget that, in our opinion, are critical to the continued development of water resources in Oklahoma. We are requesting the Committee add the projects and funding outlined herein.

We ask the Congress to provide funds for the Corps of Engineers to continue Preconstruction Engineering and Design on Sand Lake. This work should not be forsaken for imagined difficulties in future land acquisition. We recommend and urge your support to provide funding for the start of construction for Big and Little Sallisaw Creek Navigation Project, Sallisaw, Oklahoma.

We appreciate the concern the Subcommittee has shown in the past regarding a drastic reduction in funding of water resource development in this country. We support and encourage continued water development in order to ensure adequate resources for America's future growth and prosperity.

We thank the distinguished Committee for the opportunity to present our views on Oklahoma's FY 1989 water development requirements.

FY 1989

OKLAHOMA -- Recommendations in Addition to President's Budget

	Project	Funds Requested To:
1.	Arkansas Basin Chloride Control Project	Continue Advanced Engineering and and Design
2.	Arkansas-Red River Basin Solar Energy Investigations	Continue Study
3.	Big and Little Sallisaw Creek Navigation Project	Initiate Construction
4.	Candy Lake	Continue Construction
5.	Sand Lake	Continue Advanced Engineering and Design
6.	City of Skiatook Levees	Continue Advanced Engineering and Design and Construction

City and County of Muskogee, OK

On behalf of the citizens of the City and County of Muskogee, Oklahoma, we request the support of this committee for the development of an inland water Marina on the Arkansas River for recreation and navigation on the McClellan-Kerr Arkansas River navigation system at River Mile 395 between U.S. Highway 62 to north and the Oklahoma Gas and Electric Company power plant to the south at Borrow's Pit at the Three Forks Ramp. The need for a full-service, first-class marina is exemplified by the lack of marina facilities on the Arkansas River in Oklahoma. The development of the Three Forks Marina would be an aid to pleasure boating by allowing boats to travel further upstream and obtain the services necessary for the return trip.

We endorse and approve the action of the Arkansas Basin River Interstate Committee and its members in presenting their request for appropriations to continue development of the natural resources in the Arkansas River Basin.

We also endorse the full program on Public Works as adopted by the Arkansas Basin Development Association.

Both imports and exports have exceeded estimates, since this land-locked area has been connected to the ports of the nation and the world. The Army Corps of Engineers Institute for Water Resources researched the benefits and costs of the $1.2 billion Arkansas River Project and found it produced a realized rate in excess of 13 percent during its first ten years of operation.

Now that studies are complete for the installation of low head hydro-electric production throughout the navigation system, we feel that it is absolutely necessary that the Corps of Engineers control the design, construction and operation of the facilities in order to eliminate diverse effects on navigation. We further recommend that hydro-electric power construction be deferred until there is a demand for additional electric power usage.

We want to thank the members of this distinguished Committee for the sincere and dedicated manner in which you have permitted those of us who deal in Water Resource Projects on a day to day basis to appear before you to present recommendations regarding appropriations for the Water Resource Projects in the five Arkansas River Basin States. You can be very proud of your record in appropriating necessary funds through the years. We hope this philosophy will continue in the years to come.

STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE—KANSAS

Mr. Chairman and members of the Committee, my name is James O. Foster. I am Business Management Coordinator for Boeing Military Airplanes, Wichita, KS and Chairman of the Kansas Governor's Interstate Committee for the Arkansas River Basin. I am pleased to submit this statement today on behalf of myself and the other members of the Kansas Delegation.

My colleagues are Mr. Arthur T. Woodman, Architect, Wichita; Mr. Frank Liebert, Attorney-at-Law, Coffeyville; Mr. Roger Brown, Bank Executive, Arkansas City; and Mr. Taylor Peckham, Insurance Executive, Augusta, Kansas. We are honored to join with our colleagues from the great states of Arkansas, Colorado, Missouri, and Oklahoma in appearing before you today to put forth our views on the appropriations and projects in Kansas and the Arkansas River Basin.

The Appendix lists the projects in the Kansas portion of the Arkansas River Basin. The figures are those in the President's budget which the Kansas Interstate Committee fully agree with and request that funding be granted.

I would like to call your attention to two construction projects which are particularly important to Kansas. The Great Bend Flood Control Project is most important to stop flooding of a major city in the western portion of Kansas. The Halstead Project is also an important project because Halstead is vital to the surrounding areas. This city contains a major regional hospital which provides medical services to the surrounding farming community. I would also like to call your attention to the Douglass Lake Project which is important because it contains the possibility of being a major municipal and industrial water supply in the future. It could assist not only the City of Douglass; but also Augusta, Newton, Winfield, and Arkansas City with a critical water supply for their continued growth. Growth of South Central Kansas could well depend on the Douglass Lake Project.

We request the necessary funds be appropriated to complete the comprehensive study of the Verdigris River Basin in Kansas and Oklahoma which has been undertaken and partly finished. We request $200,000.00 be appropriated for Fiscal 1989.

Mr. Chairman and members of the Committee, we wish to thank you for the sincerely dedicated manner in which you and your distinguished colleagues in the Congress of the United States have dealt with the Water Resources Programs in allowing us to present our views and recommendations to you. We look forward with great expectations and hope for the future of water resource development in Kansas; with your assistance, it can be achieved.

KANSAS INTERSTATE COMMITTEE RECOMMENDATIONS
FISCAL YEAR 1989
ARKANSAS RIVER BASIN IN KANSAS

Project	Type of Project	Surveys	Advance Engn and Design	Construction	Operations & Maintenance
Kansas					
Arkansas River & Tribs, Great Bend, KS to Tulsa, OK	FDP	400,000			
Caney River, KS & OK	FDP	150,000			
Clinton Lake, KS	FC				1,293,000
Council Grove Lake, KS	FC				707,000
Douglass Lake, KS	FC		750,000		
El Dorado Lake, KS	FC				464,000
Elk City Lake, KS	FC				690,000
Fall River Lake, KS	FC				794,000
Grand Neosho River, KS	FDP	250,000			
Great Bend, KS	FC			3,500,000	
Halstead, KS	FC			1,800,000	
Hillsdale Lake, KS	FC				594,000
John Redmond Dam & Reservoir, KS	FC				923,000
Kanopolis Lake, KS	FC				1,986,000
Marion Lake, KS	FC				800,000
Melvern Lake, KS	FC				1,156,000
Milford Lake, KS	FC				1,250,000
Pearson - Skubitz Big Hill Lake, KS	FC				814,000
Perry Lake, Ks	FC				1,595,000
Pomona Lake, KS	FC				1,097,000
Toronto Lake, KS	FC				251,000
Turkey Creek Basin, KS & OK	FDP	170,000			
Tuttle Creek Lake, KS	FC				2,520,000
Upper Little AR River Watershed, KS	FC	200,000			
Wilson Lake, KS					1,187,000

CCR - Corps Capability Request

SUPPLEMENT TO STATEMENT OF JAMES O. FOSTER

Adequate supplies of potable water are essential to the health, wellbeing and current and future economic development of any area. Protection of existing water supplies and the development of new supplies to meet anticipated needs are PRIORITIES FOR THE SEDGWICK COUNTY, WICHITA, KANSAS AREA. Toward those ends, basic research studies are of critical interest to citizens of this area.

The priority study is called the "Evaluation of the Hydrologic Characteristics of the South Fork of the Ninnescah River as a Potential Water Supply for the Wichita and Sedgwick County Area." This is in the Lower Arkansas River Basin, a major portion of South Central Kansas. The purpose of the project is to define the nature of the salinity problem in a short reach of the river and to determine the technical and economic feasibility of mitigating the problem. The result of the study could be a decision to develop a reservoir of potable water downstream from the project site. Funding in the amount of $ 194,000. should be placed in the U. S. Bureau of Reclamation budget in order to complete the three-year project ($89,000. for the first year, $53,000. for the second year; and $52,000. for the third year).

We strongly solicit your support for this important water study and urge you to sponsor action to place appropriate funding for these activities in the current federal budget. Your attention to our request is most appreciated.

The U. S. Geological Survey (Lawrence, Kansas), the Kansas Water Office (Topeka, Kansas) and local officials are prepared to initiate this study upon gaining your support.

STATEMENT OF THE ARKANSAS RIVER BASIN INTERSTATE COMMITTEE—COLORADO

Mr. Chairman, and members of this distinguished Committee, my name is Charles L. Thomson, and I am General Manager of the Southeastern Colorado Water Conservancy District, with Offices in Pueblo, Colorado. I submit this statement today on behalf of the other four members of the Colorado delegation, who were appointed by our distinguished Governor, the Honorable Roy Romer. My colleagues are Mr. John E. Javernick, former and rancher from Canon City, representing the Upper Arkansas Basin in Colorado; Mr. Lee Hancock, retired Superintendent of the High Line Canal Company near Rocky Ford, representing the Lower Arkansas Basin; Mr. Raymond D. Nixon, retired Executive Director, Department of Public Works for the City of Colorado Springs, representing municipal and domestic water users, and Mr. William McDonald, Director, Colorado Water Conservation Board in Denver, representing the Office of the Governor. We are truly honored today, Mr. Chairman, to join our colleagues from the other great States of Arkansas, Missouri, Oklahoma and Kansas, who make up the Arkansas River Basin Interstate Committee, and appear before you as a unified group respectfully requesting appropriations for necessary water resource projects in our five states. I also have the distinct honor of appearing before you as the Chairman of the Interstate Committee, having been elected to that Office by my colleagues at our Annual Meeting in Tulsa, Oklahoma March 9, 1988.

The members of the Colorado delegation have carefully reviewed the construction and operation and maintenance requests submitted by President Ronald Reagan for Projects in Colorado, and wholeheartedly endorse each of them as essential elements in the continued programs of the U.S. Bureau of Reclamation and Army Corps of Engineers.

In his Budget, President Reagan recommends the following for continued construction on the Fryingpan-Arkansas Project in FY 1989:

Construction----------$6.7 million
O & M----------$2.137 million

The construction funds will provide $3.041 million for completion of the second phase of the Fish Hatchery at Pueblo Dam. The first phase was transferred to the Colorado Division of Wildlife earlier this year, and excellent progress has been made on the hatching and rearing of 100,000 channel catfish from eggs to three inches; 250,000 trout from eggs to five inches; 40 million walleye at fry from eggs, and 25,000 tiger muskie from eggs to seven inches. Phase I of this this project involved the construction of a hatchery building, and Phase II includes ponds, raceways and other facilities which will provide fish to meet the ever growing demands of sportsmen whe enjoy fishing of various types in Colorado.

It also contains $2.275 million for construction and completion of the final phase of recreation facilities at Pueblo Reservoir. This will provide an additional 181 camp sites, of which 100 will be located on the South side, 80 on the North side, and an additional 51 picnic units. Included will be one group picnic area, necessary roads, sanitary facilities including showers, and signs. This particular contract is being awarded under the Small Business Administration (8)(a) Set Aside Program. It is expected the contract will be awarded in September.

The funds include $170,000 for cathotic protection in the Fountain Valley Pipeline, which serves the rapidly growing Colorado Springs area; $393,000 for microwave communication system at Mt. Elbert Power Plant which will tie this important peaking facility in with the Big—Thompson facility at Loveland, Colorado. Also included are $304,000 for the required removal of dykes, an old dam and outlet gates, at Twin Lakes Dam and Reservoir, which will complete that facility. Other smaller projects are provided with $67,000.

The appropriation of $2.137 million for annual operation and maintenance is, in my opinion, Mr. Chairman, $400,000 short of what the Bureau actually needs and has capability to expend during the next Fiscal Year. Many of the facilities in the Fryingpan-Arkansas Project are over ten years old, and increased maintenance is absolutely essential to assure we can meet our customers requirements. The investment of the additional funds at this time will prevent the need for the Bureau and our District to come to the Congress for emergency funds to meet extensive repairs. The payment of operation and maintenance expenses are included in the Repayment Contract. between the Bureau and our District.

We were also pleased, Mr. Chairman, to see the Administration has recommended an appropriation of $200,000 for continued work at the Leadville Mine Drainage Tunnel. As you know, the Bureau of Reclamation inherited this project in the late 1960's when water quality problems were first detected. They entered into a Cooperative Program with the Environmental Protection Agency in 1987, and installed a Pilot Water Quality Treatment Plant which has worked better than expected. This Drainage Tunnel is at the headwaters of the Arkansas River, and if a solution can be found for the removal of the pollutants, it will not only help improve the water quality conditions on the Arkansas River, but provide technology which can be applied elsewhere in the United States. For that reason, we strongly recommend that the appropriation for the project be increased to $1.035 million, which will enable the Bureau to enlarge the Pilot Plant to meet water quality programs.

Mr. Chairman, and members of the Committee, we are also very enthusiastic about the recommendation of the Administration as regarding Corps of Engineer Projects in Colorado as follows:

Fountain Creek Flood Control Project at Pueblo, Colorado----------$2.7 million
General Investigations, Colorado Springs - Fountain Creek----------$50,000
Pikes Peak Flood Warning System----------$15,000

These funds will permit the Corps of Engineers to begin construction on Phase II of the Fountain Creek Flood Control Project, which will provide necessary flood protection for the downtown Pueblo Business District, a mainline railroad track, and Interstate 25. Construction began on the initial phase in 1987, and it is hoped ground breaking for the second phase can take place in June. The total cost of the project is estimated at $8.6 million, of which the City of Pueblo has approved the expenditure of $2.33 million under the cost sharing formula approved by the Congress of the United States in 1986.

The General Investigation Project in and around Colorado Springs is absolutely essential to provide adequate flood protection for this rapidly growing urban area in Colorado. The Pikes Peak Flood Warning System will provide an alternative to the actual construction of flood routing facilities by providing an early warning system which will enable local entities to take remedial action.

The Operation and Maintenance Budget recommended for the Corps by President Reagan is as follows:

John Martin Dam and Reservoir----------$1.68 million
Trinidad Dam----------$548,000

We are pleased, Mr. Chairman, that the John Martin amount includes $330,000 for the construction of a much needed boat ramp. In our testimony last year we requested that $315,000 be added to the Corps Budget for the start of construction of this boat ramp. Although the funds were not appropriated, the Corps was able to complete some preconstruction engineering, and now have the capability to proceed with this project when the funds are available. The water level at John Martin Reservoir has increased considerably since 1980 when a Basinwide Winter Storage Program was developed among all irrigation and municipal water entities, and it has become a very appealing and attractive water recreation area for people from Colorado, Kansas, Oklahoma and Texas.

Mr. Chairman, and members of the Committee, we once again want to sincerely compliment you and your predecessors for the foresight, wisdom and courage which each of you have demonstrated down through the years by providing funds for essential water resource management programs throughout the United States. Those of us in the water management business would dread to think what problems would face our nation in both water quality and quantity were it not for that foresight. We appreciate the opportunity to appear before you today, and stand ready to provide additional and more specific information upon your request, or that of your Staff.

STATEMENT OF THE ARKANSAS BASIN ASSOCIATION

Thank you for allowing me to appear today to present testimony as President of the Arkansas Basin Association. This organization has been in existence for many years working on behalf of development of the Arkansas River Valley with particular emphasis on the McClellan-Kerr Arkansas River Navigation Project. We deeply appreciate the support given us by the Congress in the past years which made possible the construction of this great project and continues in operation today through your timely appropriations.

We urge approval of all items included in the President's budget that affect the McClellan-Kerr Arkansas River Navigation Project. We call particular attention to several items described below.

First, we think it is very important to continue funding of the Arkansas River, Arkansas and Oklahoma feasibility study at its budgeted level. This study is crucial because it is taking a needed relook at the Basin needs for the 1990's and beyond to insure that we are prepared to make our contribution to the national economy.

We feel it is extremely important that the construction authority presently in place for the McClellan-Kerr Project be continued. This is especially necessary until the important work required to remedy the low water problems in the White River below Lock & Dam 1 are resolved and project remedial action is taken to restore project depths in the Arkansas Post Canal, the entry portion to the overall project.

The budget includes $8,500,000 to start construction of a meander cutoff levee to eliminate the possibility of the Arkansas River cutting over to meet the White, in effect recapturing it; and for studies to solve the low water problem below Lock & Dam 1. A low water weir type dam, near the mouth of the White River, is the proper solution and we urge the Corps to move rapidly toward construction of this project. The budget amount also has funds to continue studies to provide a permanent solution to the Dam 2 stability problem and to continue land acquisition and the land impact study.

The Arkansas White River Canal has silted in since the project began operation. The Corps is not able to hinge Pool 2 as they do in the other pools of the river in order to have the river flows aid in removing the silt. The silt needs to be removed and, once removed, the Corps could then operate Pool 2 as it does other pools. We urge that an additional $2,000,000 be included in the McClellan-Kerr System O&M budget to start the deepening of this canal in order to make possible the ultimate hinge pool operation that would preserve the depths and reduce the amount of future dredging. However, there are problems in connection with disposing of the excavated material. We believe that this material could be moved to the vicinity of Morgan Point, where it could be placed and have the added value of creating stable water levels in the bend-way below Dam 2.

We urge the addition of $500,000 in the budget to install tow haulage equipment at the locks and dams. As the river has grown in use, the number of large tows going through the locks is increasing. Time and money could be saved by the tow haulage equipment which would materially benefit the overall system operation as well as the area economy.

One last point, this Association has for years endeavored to see these projects named along the river for those persons, both Congressmen and private citizens; who worked so long for authorization, construction and final development. A number of the projects have been named. Two dams, for which we have recommended names, have not been named because the individuals, although quite old, were not members of the Congress as has been the policy in the past for the naming of structures for living persons. We urge that this policy be amended so that these gentlemen who have devoted many years of their lives would be allowed to enjoy the recognition of their fellow citizens by these structures being named for them during their lifetime. We urge your approval of this naming, as has been proposed by Senator David Pryor and Congressman John Paul Hammerschmidt.

In closing, we ask to associate our remarks with those of the Chairman of the Arkansas River Basin Interstate Committee which speaks for the five states involved in the Arkansas River Basin. This committee, as has been pointed out, is composed of five members from each of the five states of Colorado, Missouri, Kansas, Oklahoma, and Arkansas. They are appointed by their respective Governors and together prepare and deliver to the Congress one message for the group as a whole, joining in our total support to the project.

Thank you again for allowing us to appear here today and for your kind reception and support.

STATEMENT OF CITY OF PINE BLUFF, AR

The proposed bridge over Lock and Dam 4 on the Arkansas River is a project of great importance to the citizens of Pine Bluff and Southeast Arkansas. We are deeply grateful to the Congress for having authorized the necessary preliminary work to be completed within a period of five years.

Completion of the project will provide rapid access for many now living in relative isolation to important public and private services available in this regional center, such as other transportation facilities, including those at the Port of Pine Bluff; emergency medical care; law enforcement and public safety; cultural and entertainment events; professional services; strategy for the economic revitalization of an area which has suffered far too long from low per capita income and limited growth opportunities.

We now respectfully request that an acceleration of the work on the bridge across Lock and Dam 4 be mandated by the Congress, and that the time frame for completion be reduced from the original five years to fiscal 1989. Acceleration of the work on this important project will materially enhance the ability of area shippers to utilize navigable waterways transportation, thereby affording economies to our hard-pressed farmers and further developing agricultural exports to the benefit of the nation. No additional authorization of appropriations is required at this time, but there is an urgency to complete the work as soon as possible.

Thanking you in advance for your timely consideration of our request.

STATEMENT OF THE PINE BLUFF-JEFFERSON COUNTY (AR) PORT AUTHORITY

Mr. Chairman and members of the Committee, the Pine Bluff-Jefferson County Port Authority appreciates this opportunity to provide its statement relative to Appropriations for the Comprehensive Development of the Arkansas River Basin for FY 1989. Without exception or qualification, the Board of Directors of the Port Authority supports and endorses the statement made on behalf of the Arkansas River Basin Interstate Committee, and urges your favorable consideration of each element of that statement as being of vital importance to the economic welfare of our city, state and nation.

Further, we respectfully urge that the Congress now direct the U.S. Army Corps of Engineers to proceed immediately with the installation of tow haulage equipment on the McClellan-Kerr Arkansas River Navigation System at Lock and Dam 3 through the David D. Terry Lock and Dam (Lock and Dam 6) inclusive, at an estimated cost of five hundred thousand ($500,000.00) dollars. Installation of this equipment, as originally intended and as the lock and dam system was designed to accommodate, is now more than justified by the volume of traffic on the river, and the operating cost savings which will be effected. Those cost savings will accrue to the benefit of shippers, operating companies, and the United States, thereby enhancing the competitive posture of the inland waterways system which has been so severely challenged in recent years.

STATEMENT OF THE ARKANSAS WATERWAYS COMMISSION

"O - L & D"

There is an urgent need for funds to complete the environmental and engineering studies which will lead to the construction of a low water navigation structure on the lower White River just upstream of its confluence with the Mississippi River.

During low water on the Arkansas-White Rivers it is the backwater from the Mississippi River that makes it possible for the navigation interest to enter or exit the Mississippi. The Corps designed the system on the assumption that the elevation of the Mississippi River at mile 599 would not go below 110'. It has gone below this depth on four occasions since 1982.

A combination low water lock and dam with weir built in the White River near mile .5 would provide the means whereby commercial navigation could be assured of using the entire 9' system during periods of low water. Congress should give this project the highest possible funding priority and in-turn insist on the Corps moving expeditiously to complete the project.

ARKANSAS BASIN COMPREHENSIVE STUDY

Funds are required this year to complete all portions of the Arkansas Basin Comprehensive Study and provide the study contents to the public in late 1989 or early 1990. All the authorized purposes for the Arkansas River project are included in the study.

The study, when completed, would include comments devoted to Lock and Dam "O" (vicinity of mile .5, White River) and some thoughts devoted to creating an added navigation impoundment in eastern Oklahoma or western Arkansas for the McClellan-Kerr Navigation System.

The funds are required to meet the Corps and public study completion dates.

DREDGE - CANAL

The depth or elevation of the canal should be lowered in order to lower the dredging costs and to lessen the possibilities of shoaling in pool 2. This would be accomplished by "hinging the pool".

"Hinging the pool" means lowering the water surface level in the pool immediately upstream of dam 2 as much as 5' during periods of high flows. The consequent flushing action minimizes the deposit of sediment upstream near the junction of the flat and sloping portions of the pool and transports sediment into the deeper water in the downstream part of the pool. Hinging a pool is a temporary maintenance measure that does not reduce channel depths to less than 9'.

The Corps can and does hinge all the pools of the system except pool 2. The greater canal depth would enable the Little Rock District to hinge pool 2 yet not ground traffic moving through the canal.

Funds are needed this year for dredging the canal to a depth of 14'.

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

Senator JOHNSTON. Now, I understand that the subcommittee has received several additional statements from this general area which I will place in the record at this point.

[The statements follow:]

STATEMENT OF RURAL ENTERPRISES, INC.

Mr. Chairman, as president of Rural Enterprises, Inc. in Durant, Oklahoma, I'd like to express my appreciation for the opportunity to address this committee on a matter of crucial importance to this country's economic future - the successful transfer to industry of emerging technologies. As the attendees of a recent Technology Transfer Society meeting agreed, poor technology transfer is responsible for the United States' increasing failure to remain competitive in the development of new technologies, products and processes. This "gap" between the development of technologies in public and private laboratories and their application by industry is particularly acute among small businesses, which create 80 percent of U.S. jobs and 24 times more innovations per research dollar than large firms.

Rural Enterprises, as a non-profit industrial development center dedicated to the creation of businesses in rural America, is an ideal vehicle to assist in meeting this need. Along with a successful eight-year-old technology transfer program, REI provides innovation evaluation, industrial incubator facilities and financial assistance. These services are designed not only to stimulate innovative product ideas that use new technologies, but to then foster their development and launch them into the market as new businesses. REI's role as a full-service organization has allowed it to help create more than 1,000 new jobs in small businesses using federal technologies, and then ensure the development of those technologies with its other services.

For this reason, we believe REI could do even more as a designated technology transfer center contracting with the Department of Energy and the U.S. Army Corps of Engineers. We are proposing that both DOE and the Corps contract with Rural Enterprises to provide technology transfer services to small businesses in the Southwest.

REI has established an extensive database structure with instant computer display and printout capabilities to ensure the swift and effective transfer of technology to American industry and local governments. The structure, consisting of three databases, is designed to identify technical needs in businesses and governments throughout Oklahoma, and match those needs with technology solutions. One of the databases, the Industrial Development Initiative, contains the names and technical needs of state businesses, while a second database lists city and county government entities across Oklahoma, along with some of the technology needs identified for each one.

The third database contains technologies, primarily technologies developed by NASA and the Corps of Engineers, which have been evaluated by REI technical specialists. These technologies can then be matched with problems identified in the other two databases. REI's technical personnel gather information for these databases through an intensive and ongoing effort to contact industry and government representatives throughout the region, as well as through an active literature program.

This system provides a comprehensive, effective means of knowledge transfer by identifying needs, and locating and ensuring the application of solutions. It also enables REI to develop a close working relationship with industry and local governments. In addition to its own technology application and research capabilities, REI has access to a multitude of federal laboratories and a network of contacts within each one. Problems identified for research and/or application can be screened for applicable related technology that may be available in these laboratories. REI also has access to a computer search capability of all documented federal technology.

One example of REI's successful technology transfer program is TechniBlast, a small business located in one of REI's industrial incubators in Shawnee, Oklahoma. TechniBlast specializes in the marketing of blast equipment for cleaning and treating metal products. REI assisted the company in obtaining a NASA technology for a coating process for aluminum die-casting molds. This permanent process, which is valuable to any industry such as the automotive which uses aluminum die-cast parts, prevents the molds from scratching the products. TechniBlast is developing the equipment necessary to conduct this coating process. The company is the only manufacturer of this particular process in the United States.

Another REI technology-transfer client is the Corazonix Corporation, a biomedical engineering firm founded by the son of former U.S. House Speaker Carl Albert, Dr. David Albert. Corazonix, which began operations in REI's McAlester incubator and is now located in Oklahoma City, obtained 53 different medical technologies through REI. As a result, it was able to avoid duplication of some of the basic research and was able to further develop one of the technologies into a product that was patented and licensed to a large manufacturer. This patent was for an implantable blood pressure device. After the device was patented, the newly developed technology was returned to NASA in the form of a reverse technology transfer.

Other technology innovators assisted by Rural Enterprises include Neil Parker, a participant in the first REI-sponsored Wes Watkins New Product and Process Fair. The fair lets entrepreneurs display their new product and process ideas and allows prospective manufacturers to review them. REI's specialists provide each entry in the annual fair with an evaluation of its technical and commercial feasibility. Mr. Parker received a $50,000 Department of Energy grant to develop his invention, an improved oil well pumping jack, with assistance from Rural Enterprises. Another REI client that received a DOE grant is Smokaroma, a minority-owned business in Boley, Oklahoma. Owner Maurice Lee developed "Instant Burger," with a $75,000 DOE grant. This device passes electric current through meat, cooking it quicker than conventional cooking methods. And because nothing except the meat is heated, there is a significant energy savings.

The development of these two inventions was made possible by the Energy-Related Inventions Program, a DOE-funded program designed to support the development of energy-related inventions, particularly those of individuals and small businesses. REI also sponsored DOE's 1984 Making Inventions Work workshop in Stillwater, Oklahoma. Both of these programs serve to make inventors and small businessmen aware of the possibilities available through the transfer of federal technologies to the private sector.

With its already established programs in innovation evaluation and technology transfer, Rural Enterprises would be an ideal in-the-field clearinghouse for the screening of energy-related invention ideas. This would allow the DOE to expand its own program and increase the number of viable energy technologies developed. In addition, REI's technology transfer database structure and strong outreach program could be used almost immediately to begin matching DOE technologies with potential users throughout the Southwest. REI is already acting as a middleman for officials of DOE's Los Alamos Laboratory and the U.S. lumber industry, seekings ways to save energy in the kiln drying of lumber. In addition, REI is working with DOE specialists at the Argonne National Laboratory to develop a heat exchanger for an REI client which would function efficiently both as a condenser and an evaporator for a freon-charged system exchanging heat to and from water.

REI is already working with energy-related inventions and federal laboratories for the effective transfer of DOE technologies and development of new products and processes. We are seeking to make that relationship even more productive with a $500,000 contract on a one-year trial basis. This pilot project would:

1. Promote the DOE Energy-Related Inventions Program on a regional basis as an ongoing effort to solicit new product ideas that will result in energy savings by actively seeking in-the-field ideas that can be developed.

2. Provide technical assistance to area small businesses and transfer appropriate DOE technologies to solve their technical problems.

In addition to contracting with the DOE, Rural Enterprises is seeking to continue its successful relationship with the Corps of Engineers with a $500,000 contract and a designation as the Corps technology transfer center. REI has maintained a four-year relationship with the Corps, developing under its guidance a technology transfer computer model which can be easily replicated and used by other agencies throughout the country. One of the databases in this model, the local governments database, was developed specifically for the transfer of Corps technologies.

This database, which lists the areas of responsibility and technology needs of every city in Oklahoma, was built using the data from an exhaustive REI survey of all cities and county water districts in the state. After finishing this survey, REI's technology transfer team compiled the responses and sent each city an REI brochure which lists various Corps technologies in areas such as road repair and waste disposal. The team is meeting requests for more information with the full technical reports and additional assistance as it is needed. REI has received a total of 620 requests for additional information on technologies such as the favorite "Engineer's Pothole Repair Guide."

The technologies transferred to local state governments are already being successfully applied to universal problems such as eroding streambanks. One Oklahoma county used a Corps technology supplied by REI to solve this problem. Bryan County officials needed an inexpensive and relatively simple method of preventing the erosion of streambanks under county roads. They found this method in the Corps' gabion baskets technology.

The technical needs gathered through outreach efforts and stored in REI's government and industry databases are matched with the appropriate Corps technologies, which have been evaluated by REI specialists. If REI is able to continue its role as an intermediary between the Corps and local governments, technology transfers such as that in Bryan County would allow local governments throughout the Southwest region to solve basic problems more efficiently and allow greater portions of their budgets to be used for economic development efforts.

Mr. Chairman, these two projects involving the Department of Energy and the Army Corps of Engineers would allow REI to continue its technology transfer efforts at the grass-roots level, where they are most needed. As I am sure the committee is aware, for the first time the world's number one patent producer is not an American company, but a Japanese firm, Hitachi. If we as a nation are going to remain technologically competitive, we must improve not only our ability to discover new technologies, but also our ability to get them from the laboratory to the machine shop. Because small businesses in particular often have the least access to new technologies, an organization such as Rural Enterprises is crucial in filling the gap. With this committee's help in ensuring continued funding, REI will be able to help its clients and the United States remain economically competitive.

STATEMENT OF THE UPPER MISSISSIPPI FLOOD CONTROL ASSOCIATION

SUMMARY AUTHORIZED PROJECTS

PROJECTS	EST.FED. COSTS	BUDGETED FY 89	REQUESTS	REMARKS
1. South Quincy Drainage & Levee District, IL (F.C.)	$7,590,000	$3,600,000	$3,600,000	See Discussion
2. Green Bay Levee & Drainage Dist. No. 2, Iowa (FDP)*	$5,180,000	0	$ 100,000	See Discussion
3. Muscatine Island Levee & Drainage Dist. and Muscatine Louisa Co. Drainage District No. 13, Iowa (FDP)*	$10,500,000	$ 150,000	$ 150,000	To Complete 1st Stage Plans & Specs See Discussion

*(FDP) Flood Damage Prevention

As mentioned last year in our testimony, our Association is very appreciative of your Honorable Committees past support.

You will note that three of our twenty-four Member Districts were recommended for increased flood protection under P.L. 99-662. The South Quincy and Muscatine Island projects are progressing satisfactorily. However, our Association is concerned over the status of the Green Bay Levee and Drainage District No. 2, Iowa project, due to its dormant stage and lack of funding during the last two years. We understand that projects which do not receive funding through appropriation bills within five years are to be automatically deauthorized.

A brief discussion of the three Upper Mississippi Flood Control Association's authorized projects is as follows:

1. SOUTH QUINCY DRAINAGE AND LEVEE DISTRICT FLOOD CONTROL PROJECT

During 1987 the District secured Court approval to enter into contract with the Federal Government and the State of Illinois to construct the project and to spread a special assessment against all lands within the District to pay it's share of the cost. The special assessment has been spread and court approved.

The current estimated construction costs remain at $10,120,000, of which cost sharing is:

Federal Costs at 75% ----- $7,590,000
Non-Federal at 25% ------- $2,530,000

The first stage of the Levee Improvement Project is under construction and work is progressing on schedule.

The 2nd stage is scheduled for letting sometime in this calendar year, 1988, hopefully by July or August, 1988.

Our association urges retention of the President's budgeted amount of $3,600,000 for FY 89.

2. THE GREEN BAY LEVEE AND DRAINAGE DISTRICT NO. 2, IOWA, FLOOD CONTROL PROJECT

The Green Bay Levee and Drainage District No. 2, Iowa, Flood Control Project is dormant due to lack of Federal funding.

May we be forgiven for repeating. This Project after running the gamut of approximately nine years of study, dredging demonstration projects, inter-State and Federal Agreements, a C.O.E. design study or Survey Report based upon a 200 year flood frequency protection was recommended for construction. The Board of Engineers of Rivers and Harbors during review recommended that the protection be increased to a 500 year flood frequency design.

The administration found that a 500 year design was not appropriate for Agriculture areas and questioned the proposed protection to the large Fertilizer Plant within the District.

It is our understanding that in the Corps of Engineers Cost-Benefit analysis, benefits were not taken for probable damages of chemical spills into the River due to a levee failure.

The Drainage District, has no serious objection to reverting back to the original design and cost basis of a 200 year frequency flood protection project, but agrees with the analysis of the Board of Engineers for Rivers and Harbors that a 500 year design is cost effective.

It is the feeling of local landowners that the large Chemical Plant which is now closed down due to the depressed agricultural segment of the economy, could be disregarded in evaluating the cost/benefit ratio. It could well be that the District could stand on its own merit.

Continuing Planning and Engineering funds for FY 89 might develop justification for a closer look at the feasibility of the project. At least another look might prevent the total loss of the great amount of Federal, State and Local costs incurred and spent to date.

It is our understanding that the C.O.E. may not express a capability for Continuing Planning and Engineering for FY 89. We do not know the Corps status as of this writing, but the Landowners are anxious to keep the project alive in hopes of future funding and more favorable economic times.

We sincerely urge that efforts be made to keep this project alive until fruitation or until all aspects are evaluated.

The District is presently in the process of trying to determine if it can support it's 25% cost sharing provision of the "Water Resources Development Act of 1986, P.L. 99-662".

3. THE MUSCATINE ISLAND LEVEE DISTRICT, MUSCATINE-LOUISA COUNTY DRAINAGE DISTRICT NO. 13, IOWA, AND THE MUSCATINE CITY-MUSCATINE ISLAND DISTRICT

This project is progressing satisfactorily. Our Association respectfully requests that your Honorable Committee support the budgeted amount of $150,000 for Continuing Planning and Engineering in order to complete the 1st Stage of the Plans and Specifications.

The Marion County Drainage District, Marion County, Missouri, a member of our Association, has a small watershed project under study, authorized under Section 205 of the Flood Control Act of 1948, as amended. The Act provides authority to the Chief of Engineers to approve and construct such projects if they are economically justified and the cost does not exceed a specified amount.

This study does not require direct Congressional action, however, our Association appreciates the provisions granted by Congress under Sec. 205 since it facilitates action on small needed projects.

During the past few years, members of our Association continue to express concern over river bank erosion. When the Upper Mississippi Navigation System was constructed in the 1930's, the existing private levees became a part of the Navigation System, all tied closely to the economic welfare, human lives, recreation, and environment of the entire region. As the years have passed, the Mississippi River in its natural meandering action has tended to erode certain bank areas until long existing levees are becoming endangered. Our Association believes "a stitch in time saves nine" and that it is hoped that funding for the Corps of Engineers under "O & M" may be increased for the purpose of bank stabilization and blocked gravity needs.

The drainage districts simply do not have the funds to rip-rap and maintain the navigation channel in place.

It is a privilege to present this testimony.

STATEMENT OF CITIZENS FOR COMPREHENSIVE FLOOD CONTROL

We as concerned citizens ask that no funding be provided for the Shoccoe Dry Dam Project in the fiscal year 1989 budget before your committee. The project is not economically viable due to several serious cost omissions and will not have a local sponsor when the General Design Memorandum is completed this year. Local opposition to the project has continued to grow not only in the areas directly impacted by the project but also in the area the project is proposed to protect. Numerous attempts have been made to obtain a Local Sponsor for the project over the past two years but all have failed due to the lack of economic viability of the project. The following information outlines the cost omissions of the project and the failed attempts at local sponsorship.

The cost omissions are:

NATCHEZ TRACE PARKWAY: The dam site will cross the Natchez Trace Parkway, a unit of the National Park Service, near Cypress Swamp, and will periodically flood 10 to 12 miles of the parkway. Only $ 5 million dollars has been included in the cost estimates for damages to the park. The Park Service estimates that it costs $ 2 million dollars per mile to replace the roadway alone and this does not include monies for acquisition of additional homes and businesses. The area to the west of the Natchez Trace, is a highly populated area and the actual impacts from this relocation have not been accounted for to date. The ACTUAL COSTS for relocation of the parkway and the River Bend Day Use area would be closer to $ 20 - $ 24 million.

STATE HIGHWAY 25: The dam will also require the reconstruction of 1.6 miles of the newly completed state highway and the bridge at the Fannegusha Creek. Only $ 950 thousand dollars had been included for this reconstruction at the Interim Report. The State Highway Department states the ACTUAL COSTS would be $ 2.7 million, at 1986 price levels.

LAND ACQUISITION: Approximately 50,000 acres in Leake, Scott, Madison and Rankin counties was used as the original COE figure for the Shoccoe pool. In 1985, the COE dropped 11,350 acres because they determined that the flood stage would not be increased in this area. This acreage, however would be subject to an increased flood duration, of as much as 8 to 10 days in some areas. Of the remaining acreage, 35,350 acres will be acquired by an easement, and 3,500 acres will be purchased fee simple. The cost of the easement has been estimated by the COE at 28% of the fair market value or $ 6,185,200 dollars. Since this easement will restrict development and requires that any structure for permanent or temporary human habitation be removed, and since thousands of acres, at or below the elevation of 312 will flood on an annual basis, this estimate will not hold up once litigation begins.

Historically easements of this restrictive nature have been set at a level closer to 80% to 100% of the fair market value. Recent Supreme Court rulings have also mandated that this type of easement represents a taking and requires full compensation to the land owner. The ACTUAL COSTS for this restrictive easement would be closer to $ 17 - $ 18 million.

These three omissions account for approximately $ 32.75 million additional dollars.

OPPOSITION: Six counties have resolutions for their Boards of Supervisors opposing construction of the dam. Four of these counties are members of the Pearl River Basin Development District (PRBDD), the intended local sponsor. The six counties are: Leake, Scott, Neshoba, Madison, Winston and Lawerence. The following organizations and city governments are also in opposition to the project; MS Farm Bureau Federation, MS Forestry Association, International Paper Company, Pearl River Wildlife Management Association, City of Carthage in Leake Co. and the City of Clinton in Hinds County. /Copies of Resolutions & Newsclippings

TAXPAYER OPPOSITION: There are 96,000 plus homes in Hinds Co. according to the MS Research and Development Center. In 1979, the flood of record, 1,935 homes received flood damages, or 2%. As stated by one Hinds Co. representative "This is too much money for too little protection, for too few people". /Newsclippings

Other citizen concerns are evidenced by letters to the editor, questioning continued unwise floodplain development, subsidization of real estate developer's property values in the floodplain and damages to federal and state resources. In 1984, nearly 8,000 signatures were delivered to members of the MS Congressional Delegation opposing construction of the Shoccoe Dam as the solution to the flooding problem. /Newsclippings

MS LEGISLATURE: On Feb. 25, 1987, the MS House of Representatives resoundingly defeated House Bill # 806, which was designed to fund Shoccoe Dam. The Senate Bill # 2746 died in committee. The House Bill, after four amendments was defeated to prevent additions in conference. The major concerns expressed during debate of the bill were: Cost omissions, questionable benefits, damages to upstream citizens and federal/state resources. Amendments to the bill demonstrated these concerns; 1. Continue to allow any three counties in the Pearl River Basin to veto the project. 2. Remove "quick take" eminent domain power. 3. Require the local sponsor to pay for all costs of relocating State Highway 25 and 4. Require Hinds and Rankin county taxpayers to vote on the issuance of the requested $ 40 million in bonds to fund the dam. /Newsclippings

HISTORICAL PERSPECTIVE AND ALTERNATIVES: Jackson has a long history of flooding and several structural attempts have been made to reduce the flooding problem for the city. In the Flood Control Act of 1936, authorization for a cleared floodway for Jackson was obtained. City officials, in a resolution of Oct. 16, 1936, declined to provide both the necessary rights-of-ways and the required agreeemnt to maintain the project due to the limitation on development. The city, in 1947 requested that the COE provide sufficient flood control to allow for development of 320 acres at the MS State Fairgrounds and 6,310 acres in East Jackson. This resulted in the construction of the Jackson and East Jackson levees. Floodplain development in Jackson continued inside and outside of the levees. In 1959, the city voiced interest in the development of a "water supply, recreational reservoir". They were also interested in development of a federal project at the same time for "flood control". In coordinated planning studies, it was determined that a federal development with an allocated 31 ft. of flood storage on top of the conservation pool would CONFLICT WITH THEIR DESIRES. The wide range of pool elevations and frequent fluctuations of the reservoir within the flood storage pool would limit their plans for recreational use and the development of adjacent lands. The 40,800 acre reservoir was built 15 miles north of Jackson in the counties of Madison and Rankin.

/ Journal of the American Planning Assoc. Spring 1982, "The Jackson Flood of 1979, A Public Policy Disaster" , Rutherford H. Platt

Again, the city officials are asking for a flood control project to allow further development. This approach continues to ignore the root of the flooding problem, floodplain development which is not designed to account for the flooding which has occured in the past. Any flood control plan for Jackson, to be effective, permanent and supported by the public, must address nonstructural controls, such as flood proofing, elevation, relocation of chronically flooded structures and wise floodplain management.

In 1983 the COE received $2.3 million to complete the GDM study for flood control in Jackson, otherwise known as the Four Point Plan. In 1984 Congress appropriated $16 million to carry out this plan. Of this only $2,409,772 was spent. The balance of the work was scaled down and the remaining monies were placed in "savings and slippage", because the benefits received from this plan would have diminished the Benefit-Cost ratio of Shoccoe substantially. /1 p. 22-24.

The 1974 Water Resources Bill passed by Congress authorizes the COE to address nonstructural flood control and offers an incentive to do so by providing a cost sharing program of 80% federal funds to 20% local funds. This cost sharing ratio is far superior to that offered for structural flood control measures such as Shoccoe Dam. Nonstructural flood control will protect those already located in the floodplain and prompt all future development to conform to floodproofing standards.

FOOTNOTES

1. The Upper Pearl River Basin Flood Control Study, US Army Corps of Engineers, revised July 1985.

2. Journal of the American Planning Association, Spring 1982, " The Jackson Flood of 1979, A Public Policy Disaster", Rutherford H. Platt.

   Dr. Platt is an associate professor of geography and planning law at the University of Massachusetts, Amherst, and is a member of the Illinois Bar. He serves as consultant to various federal agencies on floodplain management.

3. Manuscript of Hearings held before the Subcommittee of the Committee on Appropriations, 1987, 99th Congress.

4. Manuscript of Hearings held before the Subcommittee of the Committee on Appropriations, 1988, 100th Congress.

STATEMENT OF ROBERT L. MONTAGUE III ON BEHALF OF MRS. GAY MONTAGUE MOORE, MILLER COUNTY, AR

I appreciate the opportunity to submit a statement of the views and concerns of Mrs. Gay Montague Moore concerning the above named project of the Corps of Engineers,Vicksburg District, which is before the committee for funding this year. I am Mrs. Moore's attorney, business manager,and nephew. Mrs. Moore is the owner of a farm of approximately 2000 acres fronting on the Red River in Miller County Arkansas which is depicted on the map attached hereto. It is proposed that her farm be bisected by the Bear Realignment as a part of the Red River Navigation Project. The proposed division would take approximately 100 acres of her prime farmland for a new channel and leave approximately 600 acres of her land on the opposite side of the river when it is completed. The land on the opposite side of the river would be approximately 25 miles by road from her present farming opperation.

Mrs. Moore and the farmers with whom she operates her farm would suffer a significant hardship in the operation of the farm if it is divided in this fashion, and they would prefer a far less costly alternative which would be to stabilize the banks in their present location with revetments. The proposed realignment has been estimated to cost from $3,444,750.00 to $4,928,574.00 according to Corps of Engineers estimates. Mrs. Moore is confident that the purpose of making the river navigable could be accomplished as well as the prevention of excessive bank erosion by the installation of revetments such as that proposed just above her farm known as the Temple Revetment. She urges that this matter be studied further before committing funds to the Bear Realignment. If a cut must be made,it would seem that a similar if not shorter one could be made through the peninsula immediately up river from her. The costs of alternatives should certainly be compared before a committment is made to disrupt a farming operation that has been in the Moore family for more than 100 years. Mrs. Moore is heartily in support of a program to prevent soil and bank erosion on the Red River, and she is not opposed to the Red River Navigation Project, but she believes that these worthy purposes can be accomplished without mutilating her farm, and she earnestly implores the Committee to take action that will accomplish all purposes at stake in this situation. The family farm is having a difficult time surviving in the present economic climate, and its continuation is also an important public objective. It is most important to Mrs. Moore to keep her farming unit as large and contiguous as possible. The Corps of Engineers should be required to rethink this project with these factors in mind.

SUBCOMMITTEE RECESS

Senator JOHNSTON. The committee will now stand in recess until Thursday.

[Whereupon, at 4:03 p.m. Tuesday, April 12, the subcommittee was recessed to reconvene at 2 p.m. on Thursday, April 14.]

ENERGY AND WATER DEVELOPMENT FOR FISCAL YEAR 1989

THURSDAY, APRIL 14, 1988

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 1:54 p.m. in room SD–192, Dirksen Senate Office Building, Hon. Quentin N. Burdick presiding.

Present: Senators Johnston, Burdick, and Cochran. Also present: Senators Cranston and Wilson.

NONDEPARTMENTAL WITNESSES

OPENING REMARKS

Senator BURDICK. The subcommittee will come to order.

I want to welcome each one of you to the hearing today. We have a large number of witnesses that wish to be heard, therefore, in accordance with our notification to each of the witnesses, we ask that you will hold your oral testimony to a minimum in order that all may be heard this afternoon.

I ask that the detailed prepared statement that each of you have worked out very carefully be submitted for the record where they will be carefully reviewed. Then, if each witness will summarize or highlight the important points in his oral testimony, it would be most helpful.

Again, welcome, everyone, and it is a pleasure for me to introduce the delegation from North Dakota.

Governor Sinner, you may proceed.

GARRISON DIVERSION UNIT, NORTH DAKOTA

STATEMENT OF GEORGE A. SINNER, GOVERNOR OF NORTH DAKOTA

ACCOMPANIED BY:

RAY CROSS, COUNSELLOR, THREE AFFILIATED TRIBES
JOHN MADDEN, ADVISOR ON WATER PROJECTS, STANDING ROCK SIOUX TRIBE
C. EMERSON MURRY, ADMINISTRATOR

Governor SINNER. Thank you, Senator.

With me are Mr. Ed Lone Fight, of the Three Affiliated Tribes; Oliver Goard, of the Devils Lake Sioux; Earl Silk of the Standing Rock

Sioux; their counsellor, Ray Cross, of the Three Affiliated Tribes; and John Madden, the Advisor for Water Projects for the Standing Rock Sioux.

Also with me are Mr. Russ Dushinske, of the Garrison Conservancy District, and Emerson Murry, the administrator of that program.

Senator, we are very grateful to you for your perseverance in bringing recompense to North Dakota, at least in part, for the giant sacrifice that it made many years ago to provide flood protection for the downstream states on the Missouri River. Without your patient and thoughtful leadership, North Dakota would not have even the modest program envisioned in this project that was authorized 2 years ago.

I know that many have helped, but you have been a major vehicle of delivery. You are now, and we are all grateful for your work.

I also want to thank your able staff for the superb management of this complex issue for you, for all of us, and for the people of our state.

Mr. Chairman, thank you for giving us the opportunity to personally appear and urge you and your committee to modify the administration's fiscal year 1989 budget proposal to recognize, to some extent, the federal commitment for water development in North Dakota through the Garrison diversion project.

The Flood Control Act of 1944, better known as the Pick-Sloan Plan, reserved to the Upper Missouri basin states adequate supplies of water development in return for sacrifices made to provide the downstream states navigation benefits and relief from disastrous floods. It also provided water supply, inexpensive hydroelectric power, and recreation benefits throughout much of the basin.

You are all aware of the fact that North Dakota contributed over 500,000 acres for the creation of the two largest reservoirs that provide those benefits to the Missouri River basin states. That was all very valuable, rich land that was sacrificed by the state. The Pick-Sloan plan contained the authorizing language which joined the upper and lower basin states into a basinwide project providing mutual benefits to both areas, but as of yet North Dakota has not realized its promised share of the benefits.

It is now 1988, some 44 years later, and the lower basin states have been enjoying the benefits of the 1944 agreement for over 40 years. Over $1 billion in flood damages have been prevented in the lower basin in that period of time. Millions upon millions of dollars have accrued to the lower states from the commercial and agricultural development of the wide expanse of floodplain now protected by impoundments in North Dakota as well as in other upstream states. Millions of dollars in benefits from navigation and recreation have also accrued to the lower states.

Today, 35 years after completion of the Garrison Dam, I appear before you to request sufficient funds to move forward with the currently authorized project, which is drastically reduced compared to the agreement of 1944. It becomes, however, an important token recompense long overdue.

Public Law 99–294, which was enacted on May 12, 1986, severely cut promised water development in North Dakota. Our state was again set back in the repayment of its losses to the Pick-Sloan plan, but in Public Law 99–294 the contemporary water needs of the state were to be assisted through the Garrison diversion unit reformulation.

BUDGET REQUEST FOR FISCAL YEAR 1989

The administration's budget for fiscal year 1989 is a proposal that again sets back North Dakota's repayments for its earlier losses. Under the current Garrison diversion unit funding proposal several areas are not adequately funded.

The first area of concern is for recreation. The proposed level of funding of $26.8 million allows only $700,000 for recreation development in fiscal year 1989.

Recreational development is one area that provides almost immediate benefit to the state. The Bureau of Reclamation working with the Garrison Conservancy District and the state parks and recreation department has initiated a park program, which as of April 1 of this year created the Devils Lake State Park.

The $700,000 will help only in a small way to continue development of the Devils Lake State Park. That amount should be nearly doubled in fiscal year 1989 in order to have a reasonable program of recreational development. This would allow immediate use of some areas of the Devils Lake State Park in 1989, which is the centennial year celebration of our statehood.

MUNICIPAL, RURAL, AND INDUSTRIAL WATER SUPPLY NEEDS

A major deficiency in the administration's 1989 budget proposal is the municipal, rural, and industrial water supply program, commonly referred to as the MR&I program. The MR&I program contained in Public Law 99–294 was intended to address the water supply needs of the entire state of North Dakota. The 1984 Garrison Diversion Unit Commission Report, authorized by Public Law 98–360, identified over 130 communities in the state with severe water supply problems.

The MR&I program was intended to provide water supplies to those communities in order to alleviate problems, which in some cases pose health hazards. To date more than 70 communities have requested assistance under this program.

When the MR&I program was developed, the needs of the 130 communities were recognized by Congress. In addition, the severe needs of the southwest corner of the state were recognized by the specific authorization and inclusion of the southwest pipeline project in Public Law 99–294.

A reasonable level of funding to meet all those needs was anticipated at $20 million per year. In 1987, only $7.5 million was appropriated for the MR&I program. In 1988, the amount appropriated was $7.69 million. Both of these appropriations were well below the $20 million per year anticipated 2 years ago in the congressional compromise.

As we sit here today, parts of North Dakota, including the southwest corner of the state, are suffering from an extremely dry condition. Unless adequate rainfall is received in most of the state, many communities will have no choice but to ration water; some communities will have to recirculate sewer effluent to make up for the lack of water supply.

Five days ago, I had to call out the National Guard to assist in putting out a large prairie fire. Last night, I am told, that there was another large fire west of Bismarck. The situation in the state and most of the West, but particularly North Dakota, is extremely dry and is one of a very critical nature.

We have several of the more critical water supply projects underway with actual construction to begin this year, but in order to continue those projects and the southwest pipeline project in fiscal year 1989, the level of appropriation in the administration's budget, $7.3 million, absolutely must be increased. Without an increase, some of these projects will come to a halt.

In order to proceed with the projects underway and to begin other critically needed projects, the fiscal year 1989 MR&I appropriation should be increased to at the very least $22 million. This will allow the construction of the Southwest pipeline project to once again proceed at a reasonable rate of progress and, if this could continue, would allow water delivery into the water-short southwest in 1991.

The state has invested $21 million in the project and will not be able to realize benefits from the project for several years without increased assistance.

Recognizing the budget constraints facing Congress, we have determined that what we feel to be the absolute minimum appropriation for the MR&I part of the bill in fiscal year 1989 should be increased to at least $22 million. That would be a $14.8 million increase over the $7.3 million administration request.

This would allow completion of some projects and limited construction of the southwest pipeline project. Based on this level of appropriation, water could not be delivered to southwest North Dakota well into the 1990's.

INDIAN WATER NEEDS

Finally, another area of concern is the Indian municipal, rural, and industrial portion of the administration's budget. It contains only $1.5 million, which is not adequate to meet the reasonable needs of the Indians in our state.

Recognizing incredible losses suffered by the Indians due to the construction of the flood control reservoirs and recognizing the water supply needs of the Indian people on the Fort Berthold, Standing Rock, and Fort Totten Reservations, the level of appropriations must be clearly increased.

Mr. Chairman, the administration's budget proposal does not reflect the purpose of Public Law 99–294, which was the development of a Garrison diversion project for North Dakota to satisfy the contemporary

water needs of the citizens of our state, nor does the administration's budget recognize the federal commitment to our state for its sacrifices in eliminating the major flood damage threat and other benefits to the lower basin states.

In order to do so, I urge you to increase the fiscal year 1989 level of funding to at least $35 million for state needs and to provide the Indian MR&I component of $4.5 million over and above the $35 million needed by the state.

I ask your favorable consideration of our request, so that the Garrison diversion project may move forward for the benefit of all the people of our state.

Thank you, Mr. Chairman.

Senator BURDICK. Thank you, Governor.

I notice that the Senator from Mississippi has arrived. Would you like to ask any questions?

Senator COCHRAN. Mr. Chairman, I don't have any questions at all, but I appreciate your recognizing me. I have heard about this project for 15 years, ever since I have been in the Congress.

Governor SINNER. But, a lot of talk and not a lot of action, Senator. We are hoping there will be some action.

STATEMENT OF RUSSELL DUSHINSKE, CHAIRMAN, GARRISON DIVERSION CONSERVANCY DISTRICT

Senator BURDICK. Russell Dushinske, chairman of the Garrison Diversion Conservancy District, you are next.

Mr. DUSHINSKE. Mr. Chairman and Senator Cochran, may I say at the outset that it is a pleasure and very gratifying for us to participate in this hearing, particularly when our senior Senator is presiding.

My name is Russell Dushinske and I am chairman of the 26-county Garrison Diversion Conservancy District in North Dakota. I appreciate the opportunity to appear here today to urge an alteration in the administration's fiscal year 1989 budget to more adequately meet the government's commitment to North Dakota and the Garrison diversion project.

Governor Sinner has briefly reviewed some of North Dakota's sacrifices to the Pick-Sloan plan which has contributed greatly to flood control, navigation, and power benefits in the lower Missouri basin states.

North Dakota State University has estimated losses to North Dakota since the closure of the mainstream dams of over $1.5 billion in 1984 dollars, a huge loss for a small state with 652,000 population. The long history of delay and failure to meet federal commitments to North Dakota under the 1944 and 1965 acts are well known.

In 1986, a federal commitment to a radically reduced project with cost reductions of hundreds of millions of dollars was reaffirmed when the Garrison Reformulation Act was passed as a compromise supported by the state, the administration, and major state and national environmental groups.

In partial recognition of the huge reduction in the irrigation acres previously contained in the project, the compromise act established a $200 million authorization for MR&I water grants in an effort to meet some of the contemporary water needs of the state.

At the same session, an appropriation of $35 million was provided for fiscal year 1987, which was deemed adequate as a startup appropriation in recognition of the relative inactivity of project construction during the previous years.

A fiscal year 1988 appropriation in the amount of $35 million was approved by the House of Representatives, although, because of the needs of the Souris project in North Dakota, the Senate committee did reduce its appropriation approval to $31 million. An appropriation of $33 million was finally recommended by the conference committee and passed.

The administration's budget proposes an appropriation of only $26.8 million for fiscal year 1989 in spite of the fact that Congress has recognized each year since the passage of the 1986 Reformulation Act that the project should be funded at a higher level.

The administration's proposal appears adequate for some parts of the project, but it is not adequate in the recreation component and grossly inadequate in the MR&I water grant portion.

As part of the recreation component of the Garrison project, a multifaceted park system was approved by the Garrison Diversion Unit Commission and the Reformulation Act for location on Devils Lake. Land has been acquired, additional lands are needed, and major improvements are to begin in fiscal year 1988 and carry on through fiscal year 1990 in order to meet the standards of the state parks department which will operate the park.

The administration's budget carries a total sum of $700,000 for recreation. This amount should be increased by at least $500,000 to a total of $1.2 million. The recreation component lags far behind the rest of the project and should be increased to at least the level proposed by the conservancy district in order to begin to meet federal commitments in the recreation area.

The major shortfall in the proposed administration budget is in the municipal, rural, and industrial water grant area. The $7.3 million proposed in the budget is completely inadequate.

It was anticipated when the Reformulation Act was passed that approximately $20 million per year would be made available for this project component within 2 years of the passage of the act, since the 2-year period was needed for engineering work and design in order to let contracts on priority projects.

The Garrison Diversion Unit Commission found that over 130 communities in North Dakota were either very short of water or using water that did not meet federal or state health standards. For instance, the city of Dickinson only a few years ago planned to recycle its sewage for municipal water purposes until the rains came. Serving this city and similar communities is part of the southwest pipeline project which was specifically approved for funding in the Reformulation Act.

The conservancy district and the state have over 70 applications to assist MR&I projects. Over 30 projects are in the engineering and design phase with construction needed in 1989.

An MR&I appropriation of $21,800,000 would be required in fiscal year 1989 to begin construction of the most advanced of these projects. However, recognizing the tight fiscal situation at the federal level, the state and the conservancy district have reduced plans for fiscal year 1989 to only the most critical projects and an amount that will permit some progress on the Southwest Pipeline.

This minimal reduced level would require $14,800,000 for MR&I water. This, together with an increase of $500,000 for recreation, would necessitate an increase of the total appropriation for the Garrison project from the administration's budget of $26.8 million to $35 million.

The GDU Commission and the Reformulation Act recognized that Indian tribes in North Dakota had not been adequately compensated for their major losses when land was taken for the mainstream dams on the Missouri River and, consequently, authorized $20.5 million for MR&I water on reservations and $67 million for irrigation.

The water shortages and poor water quality upon the reservations is no less serious than that found in other parts of North Dakota. The $1.5 million included in the administration's budget for reservation MR&I and irrigation does not meet their needs. Representatives of the Indian tribes at this table will present their needs to you following my statement.

The conservancy district urges that a reasonable increase in the administration's budget for MR&I water and irrigation upon reservations be recommended by the committee, such amount to be over and above the $35 million appropriation requested by the conservancy district for the project proper.

Again, thank you for the allowing us this opportunity to present these urgent requests.

Senator BURDICK. Thank you.

I want to assure the panel that their full statements will be made a part of the record, so to abbreviate them would be helpful.

STATEMENT OF EDWARD LONE FIGHT, CHAIRMAN, THREE AFFILIATED TRIBES, N. DAK.

Next, we will hear from Edward Lone Fight, chairman of the Three Affiliated Tribes.

Mr. LONE FIGHT. Thank you, Senator.

It is gratifying that you are chairing this hearing and the Three Affiliated Tribes would also like to reiterate the words of the Governor and, that is, we appreciate your efforts on behalf of the Three Affiliated Tribes and the citizenry of the state of North Dakota.

Mr. Chairman, my name is Ed Lone Fight. It is my pleasure to appear before this committee regarding a matter that is of crucial importance to the future of both the Three Affiliated Tribes and the state of North Dakota. That is, a fair level of congressional funding for the Garrison diversion project in fiscal year 1989.

As you know, the Garrison Reformulation Act, Public Law 99–294, directs the Secretary of the Interior to develop a reservationwide municipal, rural, and industrial water supply system that is sufficient to meet the economic, health, and economic needs of the tribal residents on the Fort Berthold Indian Reservation.

This mandatory direction acknowledges that the Three Affiliated Tribes have borne a disproportionate share of the burden in its contribution to the success of the Pick-Sloan program. No other discrete community or local government in North Dakota sacrificed over 156,000 acres of their most valuable agricultural lands or had virtually its entire population removed due to the siting of the Garrison Dam and Reservoir. These tribal people were relocated to high plains far from the safe and reliable water supply they had enjoyed in their settled villages along the Missouri River.

The Three Affiliated Tribes and the Bureau of Reclamation, under the authority of Public Law 99–294, have developed plans to meet the acute water needs of the tribal members under the presently available budget authority of the act. This joint plan in the phase I stage would improve the municipal water supply for four communities on the Fort Berthold Reservation: White Shield, Four Bears, Mandaree, and Twin Buttes.

The Bureau of Reclamation plan formulation report issued on March 7, 1988, has as its goal a delivery of a high-quality surface water supply to 1,300 tribal residents by the end of fiscal year 1989. This development plan, based on the Bureau of Reclamation's capability assessment, would address the most acute health and environmental needs presently existing on the Fort Berthold Reservation.

The Three Affiliated Tribes, with $4 million in MR&I funding under GDU for 1989, would be capable of completing the following aspects of design and construction on the Fort Berthold Reservation.

First, the tribes, with the Bureau of Reclamation assistance, would provide reliable water service to 400 tribal residents in the Mandaree area with a new water treatment plant, upgrade the intake structure and a new pumping plant.

Second, the tribe would provide an adequate water supply to 450 residents in the Four Bears area via a new surface intake, a new water treatment plant, and approximately 9 miles of main trunk line and ancilliary distribution systems.

Third, the tribe would provide water service for 150 residents in the Twin Buttes area through an upgraded intake structure, new water treatment plant, and a pumping plant.

Finally, the tribe would provide a reliable, safe water supply for 300 residents in the White Shield area through a new water intake structure, water treatment plant, and a main trunk line.

The Three Affiliated Tribes have the capability, in light of the progress they have made in fiscal year 1988, to deliver water service to several major Indian communities in fiscal year 1989. As I have indicated above, this would provide safe, reliable water supply to over 1,300 tribal members on the Fort Berthold Reservation.

However, the tribes are also aware of the limited funding available to the Garrison project. Therefore, after consulting with the Governor, his staff, the congressional delegates of the state of North Dakota, and also the affected tribes, the Three Affiliated Tribes request a minimum of $2 million in fiscal year 1989 so as to be able to serve the 1,000 tribal residents identified in the Twin Buttes, Mandaree, and Four Bears areas of the Fort Berthold Reservation.

The tribes, at this level of funding, would also be able to complete the engineering design work necessary for full water service to the White Shield area now projected to be delivered in fiscal year 1990.

Mr. Chairman, this concludes my statement. Thank you.

STATEMENT OF EARL SILK, MEMBER, STANDING ROCK SIOUX TRIBE

Senator BURDICK. Thank you very much.

We will hear next from Mr. Earl Silk, and then Mr. Goard.

Mr. SILK. Thank you, Senator Burdick.

First of all, the Standing Rock Sioux Tribe appreciates the opportunity to be here before you to testify on our needs, and before the Senator from Mississippi.

Mr. Chairman, I am Earl Silk, a member of the Standing Rock Sioux Tribal Council and we, the Standing Rock Sioux Tribe, join our fellow tribal leaders from the Devils Lake Sioux Tribe and the Fort Berthold Three Affiliated Tribes, the Governor of North Dakota, and the conservancy district.

We support the proposals that are advanced today for the funding of the MR&I projects at a cost of $39.5 million, of which $4.5 million be for Indian tribes.

Standing Rock has agreed to reduce its request to $2 million. This would enable us to construct a pipeline from Fort Yates to Cannon Ball, N. Dak., to provide safe and adequate water for the Cannon Ball community.

Presently the Standing Rock Sioux Tribe does not have decent domestic water for our people. Our domestic water is filled with minerals, including iron, manganese, sodium, sulfates, nitrates, and bacteriological contamination and these are associated with health effects, including hypertension, health disease, diarrhea, and others.

While all our communities on Standing Rock have water quality problems, the Cannon Ball community is the most severely affected. Therefore, we have determined that providing decent water to Cannon Ball is our highest priority as described in our written testimony.

Construction of the pipeline needed to provide good quality water to Cannon Ball will cost just over $2 million. Our overall MR&I need is considerably greater and our written testimony describes our capability and need for $4 million for fiscal year 1989.

However, recognizing the need to move forward and in anticipation of future appropriations to meet our needs, we agree with the approach advanced by the Governor.

We urge the committee's continued support in recognizing and meeting the tribe's full MR&I needs in future years.

Finally, planning for the project, which we will undertake, is funded and is now underway. Plans will be completed by the end of this fiscal year. Therefore, our request for fiscal year 1989 funds for construction is timely.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF EARL SILKS, MEMBER, STANDING ROCK SIOUX TRIBE

The Standing Rock Sioux Tribe appreciates the opportunity to testify before this Committee.

The Standing Rock Reservation does not have decent domestic water supply for its people. Water quality is unsatisfactory, and this raises serious health concerns. In addition, inadequate water supply constrains new housing on the Reservation, impairs our livestock industry and deters other economic growth. We have capability to utilize $4 million to construct Phase I of a municipal, rural and industrial water system to alleviate these problems.

In Public Law 99-294 Congress authorized $20.5 million for MR&I systems at Standing Rock and two other Reservations, thus recognizing the dire need in this area. Following discussions with the other Tribes which were authorized systems in P.L. 99-294, the Standing Rock Sioux Tribe has set priorities for development of its MR&I system.

Our present request is for $4 million to construct Phase I -- which includes initial development of the basic supply system (intake, treatment, and core pipeline) and service to the community of Cannon Ball from an existing water supply at Fort Yates. Service to Cannon Ball has been given highest priority because of severe problems with the present water supply at that location. Subsequent phases of the project will include service to other communities and rural needs on the Reservation by extension of the basic supply system.

The Tribe has been moving forward on MR&I. In 1985 the Tribe completed a reconnaissance evaluation of an MR&I system to serve as a water supply for Indian and non-Indian communities and

homes on the Reservation. The project will serve a projected Indian population of 13,450 and non-Indian population of 3,838. The system will meet domestic and livestock needs, at a total estimated cost of $42,020,000.

The Tribe also is undertaking the more detailed planning of the MR&I system, under a 638 contract with the BIA, with funds authorized by P.L. 99-294. The 638 contract calls for the completion of MR&I planning this fiscal year. Therefore, our request for FY 89 construction funds is timely.

For detailed information on the proposed MR&I system at Standing Rock, the priorities that we have established, and expressions of support by local government officials, I refer you to the attachment to this testimony.

ATTACHMENT TO TESTIMONY

CAPABILITY STATEMENT
STANDING ROCK SIOUX TRIBE
GARRISON DIVERSION UNIT

I. INTRODUCTION:

The Standing Rock Indian Reservation is located in south central North Dakota and north central South Dakota. The Reservation is an agriculture dependent community, with livestock raising and grain farming the primary economic activities.

The livelihood of the residents of the Standing Rock Reservation includes residence in the outlying communities of the area. However, an adequate domestic water supply is often lacking in the communities, and on individual ranch homesites. From the need for quality domestic water, and for similarly adequate water supplies for livestock, the Standing Rock Sioux Tribe has developed a plan for a comprehensive Municipal, Rural and Industrial (MR&I) water system for the Reservation.

The Garrison Diversion Unit Reformulation Act of 1986 (P.L. 99-294) provides specifically for MR&I development on the Standing Rock and other Indian Reservations. This appropriation request has been prepared under the authorization of the Garrison Act and is a positive, well planned step toward accomplishment of the objectives stated.

To best utilize existing contracting procedures, provide fiscal audit responsiblity, and parallel ongoing development at Standing Rock the Standing Rock Sioux Tribe requests that the funds continue to be allocated to the Tribe by P.L. 93-638 contract. The Tribe, the BIA, and the USBR are in agreement to this procedure.

The Standing Rock Sioux Tribe capability for FY 1989 appropriations is as follows:

1.	For construction of the Cannon Ball pipeline	$2,030,000.00
2.	For Phase I Development of the Intake, Treatment and Pumping Facilities	1,970,000.00
	Total FY 1989 Capability	$4,000,000.00

The Standing Rock Sioux Tribe supports the combined GDU appropriation request. The amount finally determined appropriate for the Standing Rock Sioux Tribe will be applied to support tribal objectives with the stated capability.

II. MUNICIPAL, RURAL AND INDUSTRIAL WATER SUPPLY:

A. The Need:

The availability of a plentiful and high quality water supply is vital to the health and well being of those living on the Standing Rock Reservation. The level of health and quality of life of the general population is directly related to the quality of their domestic water supply. Many residents currently depend on poorly constructed or low capacity individual wells or have water hauled to underground cisterns. These sources are often contaminated with bacteria or undesirable minerals, provide an inadequate quantity of water, and are costly to maintain and operate.

Water quality has been a continuing problem on the Standing Rock Reservation. The tribal council has noted many instances where health concerns have been raised because of poor domestic water sources. Housing programs on the reservation have been constrained because of the lack of good quality water and the costs of developing water for an individual rural home. A comprehensive rural water system will provide the tribal members with the necessary water at a cost lower than that of developing a number of individual systems.

Agriculture is the primary industry on the Standing Rock Reservation and the key to the full development of this industry is water. Livestock water is currently obtained from individual wells, small streams, lakes, stock dams, or dug-outs. During drought-periods these sources often dry-up and livestock must be be sold or moved off the reservation. As a result, the grazing lands can not be fully utilized and a valuable resource

is wasted. The lack of stability in the production of feeder cattle also discourages related industrial development such as packing plants, cattle feeding, and canneries.

B. The Project:

The proposed total project includes service to all communities, home sites, ranch headquarters, and pasture lands within the Standing Rock Reservation which includes Sioux County in south central North Dakota and Corson County in north central South Dakota as well as portions of Dewey and Ziebach Counties in South Dakota (2.3 million acres). It would serve a projected Indian population of 13,450 and non-Indian population of 3,838 at 1,206 individual and 18 community service locations. The proposed facilities include a Missouri River intake and pumping station and a water treatment plant near Kenel, a ground storage reservoir and booster pumping station north of McLaughlin, storage reservoirs near Cannon Ball, Thunder Hawk, and Porcupine, as well as 290 miles of core pipeline and 1,360 miles of distribution pipeline. The map shown in Figure 1 shows the location of the principal project facilities and the communities served. The estimated future peak-day water usage of the system is estimated at 3,500,000 gallons per day. The estimated cost of the total project is $42 million.

C. Service to Cannon Ball:

The construction schedule proposed is to build the basic supply facilities and the six service area branches in a phased program over a period of seven or eight years. Construction Priority #1 will be to build a pumping station and the portion of the total system core pipeline from Ft. Yates to Cannon Ball. This will allow delivery of water to Cannon Ball from the present intake and treatment facilities at Ft. Yates. After the basic supply facilities, additional core pipeline, and a standpipe are constructed in a subsequent phase, service to Cannon Ball and supplemental supply for Ft. Yates will be from the new water treatment plant.

Service to Cannon Ball has been given highest priority by the Tribal Council because of the acute need for a safe, high quality supply at that location. The present supply is plagued by high iron and manganese levels which stain plumbing fixtures and deteriorate piping, as well as high sulfate levels which cause severe odor problems and have a laxative effect on some people. The high iron and manganese levels make it difficult to maintain a safe chlorine residual throughout distribution system and can lead to serious outbreaks of water borne diseases.

III. MR&I CONSTRUCTION PRIORITY #1:

A. Present Cannon Ball Water Supply Facilities:

Cannon Ball's present water supply consists of a single well, 252 ft. deep, with an approximate capacity of 40 gallons per minute. Other facilities include distribution piping and a 76,600 gallon standpipe. Approximately 154 homes are served and the present

average day usage is estimated at 69,000 gallons with peak day usage at 138,000 gallons. Future water usage is projected to be 112,000 gallons per average day and 224,000 gallons per peak day. Problems associated with the present facilities include frequent service interruptions and water quality problems associated with high iron and manganese, bacteria, and sulphate levels.

The service interruptions are primarily due to a reliance on a single, low capacity well. This well has difficulty producing a sufficient quantity of water to meet even the average day needs of the community. If demands exceed the amount the well is able to produce or if mechanical failure of the pump or motor occurs, a service outage results leaving the community without water for consumptive use or sanitation needs.

The frequent service interruptions and high iron and manganese levels combine to produce a potential for a widespread and severe outbreak of water-borne disease in the community. As in most similar water systems, chlorine is added to destroy any bacteria present in the supply and to provide a residual level of chlorine in the water throughout the distribution system to kill any bacteria that might enter the distribution system from outside sources. The un-oxidized iron and manganese in the Cannon Ball supply combine with the residual chlorine, depleting it and removing this defense against outside bacterial contamination. During service outages, the pressure in the distribution mains drops down to zero or even to a negative pressure in some locations allowing polluted groundwater to infiltrate into the main through leaking joints. These occurrences also increase the possibility of a back-siphonage of water into the common distribution system from plumbing, fixtures, lawn taps, washing machines, etc. within the individual home, with obviously serious consequences.

Other problems are associated with high iron, manganese, and sulphate levels. Iron and manganese are considered nuisance chemicals as they cause deposits in water distribution mains and service lines and reduce their economic life and leave stains on plumbing fixtures and light-colored clothes. Iron causes red or reddish-brown deposits and stains. Manganese stains and deposits are black or gray. High sulphate levels impart a bitter taste to the water and have a laxative effect on persons unaccustomed to the water.

Alternative solutions to the proposed system are generally not available or economically feasible. Groundwater supplies are difficult to locate in an adequate quantity in this area. If a well of sufficient capacity can be constructed, the quality of the water is usually similar to or worse than the present Cannon Ball well. Surface water from the Missouri River adjacent to Cannon Ball is available in abundance but the costs associated with constructing and operating a river intake, pumping, and treatment facility are prohibitive. The proposed Construction Priority #1 is an ideal solution in that it provides much needed water to Cannon Ball in a relatively short period of time through a combination of new and existing facilities and after subsequent construction

phases it becomes a part of the total MR&I system serving the rest of the reservation. Thus, this project not only meets the short-term needs of Cannon Ball but also is part of the long-term solution for water supply to the entire reservation.

B. Project Description:

The proposed Construction Priority #1 consists of a water delivery main pipeline from Ft. Yates to Cannon Ball, a pumping station at Ft. Yates, and metering and control facilities at the delivery point in Cannon Ball. These facilities are shown in Figure 2.

The purpose of the pumping station is to overcome pipeline friction losses and elevation differences between Ft. Yates and Cannon Ball. Further engineering studies will be needed to determine the best location of this station but it is anticipated that it will be directly west of Ft. Yates and near Highway 24.

The pipeline delivery system will consist of approximately 15 miles of 8-inch main from Ft. Yates to the future standpipe site and 9 miles of 6-inch main from there to Cannon Ball. A final determination of the size, material, route, and pressure class for this line will be made during the preliminary engineering design phase for the total system project. It is anticipated that the pumping and delivery system will be sized to provide a minimum flow of 160 gpm to Cannon Ball which will constitute a daily delivery capacity in excess of the projected peak day needs of 224,000 gallons.

After the basic supply facilities and additional core pipeline and a standpipe south of Cannon Ball have been constructed, the mainline from Ft. Yates to Cannon Ball will become part of the total reservation supply system. The size, class, and hydraulic characteristics of this line will be matched to the characteristics of the total system facilities. The metering and control facilities at the delivery point in Cannon Ball will continue to be used in the same manner; however, the pumping station at Ft. Yates will be adapted to serve as a metering point for delivery of water to Ft. Yates from the total system and as a rechlorination facility for water continuing on into the system north of Ft. Yates. The engineering planning required to efficiently coordinate the phased construction of these facilities will be done as part of the preliminary engineering design of the total system. As will be seen in a later section, this will require that the total system preliminary engineering design be completed before final design of Construction Priority #1 can begin.

C. Construction Cost Estimate:

An estimate of the cost of Construction Priority #1 described in the previous section is detailed in Table 1. Construction costs are based on bid costs for recent similar projects. A contingency allowance of 30% of the estimated project cost was also included to insure that sufficient funds are available if the scope of the project is increased or if construction costs are higher than those estimated.

TABLE 1

STANDING ROCK SIOUX TRIBE
CONSTRUCTION PRIORITY #1
SERVICE TO CANNON BALL
ESTIMATED COST

Item No.	No. of Units	Description	Unit Price	Total Cost
1.	79,500 L.F.	8" water main, per lin. ft.	$ 6.30	$500,850
2.	47,700 L.F.	6" water main, per lin. ft.	$ 4.50	$214,650
3.	Job	Miscellaneous appurtenances (20% of pipe price), lump sum	$ L.S.	$143,100
4.	Job	Cannon Ball metering and control facility, lump sum	$ L.S.	$ 30,000
5.	Job	Ft. Yates Pumping Station, lump sum	$ L.S.	$100,000
		Total Estimated Construction Cost		$ 988,600
Other Costs:				
		Environmental Assessment		$ 25,000
		Geology and Geo-Technical Studies		$ 30,000
		Hydrology Investigations		$ 2,000
		Engineering:		
		Preliminary Design-Total System		$ 266,000
		Final Design-Construction Priority #1		$ 47,000
		Development of Bid Documents		$ 40,000
		Construction Administration		$ 80,000
		Miscellaneous Costs (land, R.O.W., Easements, Legal, etc.)		$ 80,000
		Total Other Costs		$ 570,000
		Contingencies at 30%		$ 471,400
		Total Estimated Project Cost		$2,030,000

IV. PHASE I DEVELOPMENT OF INTAKE, TREATMENT AND PUMPING FACILITIES:

A. Project Description:

The intake, treatment and pumping facilities will be located adjacent to the Oahe Reservoir shore near Kenel, South Dakota. They will serve as the source of water for the entire project when completed.

This initial phase in the completion of these facilities includes an environmental assessment, a geo-technical study, engineering, and construction of the intake facility. In a subsequent phase, the treatment and pumping facilities would be constructed, electrical power service upgraded, central pumping and storage facilities constructed, and core pipeline facilities constructed from the treatment plant to the central pumping and storage facility.

The geo-technical investigation will be conducted at the central pumping and storage facility and the treatment and intake facility to determine foundation conditions needed for structural design of these facilities. Also a part of this investigation will be a determination of the water depth, bottom conditions, and channel location to assist in the selection of the best intake point.

Engineering work included is the final design of all of the intake, treatment, and pumping facilities as well as bid document developments for the intake facility and construction services.

B. Impact on Overall Schedule:

The subsequent project steps depend on the completion of this initial phase. Delay in the completion of this phase will therefore result in a delay in the total project. The items included are the minimum needed to allow the project to continue construction in a logical sequential manner.

This phase will complete all the preliminary and final engineering work needed for the construction of the intake, treatment and pumping facilities, and construct the intake facility in FY '89, and allow the completion of bid documents for the treatment and pumping facility in FY '90 for construction start during the 1990 construction season. If this phase is not completed, construction start may have to be delayed into 1991. Without these water source facilities, other portions of the project (with the exception of the Cannon Ball pipeline) will not be functional.

C. Construction Cost Estimate:

An estimate of the cost of Phase I of Intake, Treatment and Pumping Facilities is detailed in Table 2. A contingency allowance of 30% of the estimated project cost was again included.

V. TOTAL SYSTEM COST SUMMARY:

A cost summary for the various components of the total system is provided in Table 3. Table 3 uses costs developed in the Feasibility Study report prepared by DeWild Grant Reckert and Associates in October of 1985.

TABLE 2

STANDING ROCK SIOUX TRIBE
PHASE I OF INTAKE, TREATMENT
AND PUMPING FACILITIES
ESTIMATED COST

Item No.	No. of Units	Description	Unit Price	Total Cost
1.	Job	Intake facility, lump sum	$ L.S.	$ 828,000
		Total Estimated Construction Cost		$ 828,000
Other Costs:				
		Environmental Assessment		$ 30,000
		Geology and Geo-Technical Studies		$ 90,000
		Engineering:		
		Final Design-Intake, Treatment and Pumping Facilities		$ 342,000
		Development of Bid Documents for Intake Facilities		$ 50,000
		Construction Administration		$ 90,000
		Miscellaneous Costs (land, R.O.W., Easements, Legal, etc.)		$ 90,000
		Total Other Costs		$ 692,000
		Contingencies at 30%		$ 450,000
		Total Estimated Project Cost		$1,970,000

TABLE 3

STANDING ROCK SIOUX TRIBE
BREAKDOWN OF PHASED CONSTRUCTION COSTS
BASED ON DGR 1985 REPORT COST ESTIMATE
(MILLIONS OF DOLLARS)

	Basic Supply Facilities	Wakpala Branch	Solen Branch	Little Eagle Branch	McIntosh Branch	Southwest Branch	Thunderhawk Branch	Final WTP Cost	Total
Core Pipeline	$1.16	$0.49	$1.70	$1.81	$1.60	$1.11	$ .74	$-0-	$ 8.61
Branch Lines	0.10	0.36	1.00	0.79	1.95	2.31	3.01	-0-	9.51
Miscellaneous	0.25	0.17	0.54	0.52	0.71	0.68	0.75	-0-	3.61
Services	0.03	0.11	0.28	0.22	0.22	0.15	0.19	-0-	1.20
Storage	0.63	-0-	0.25	-0-	0.18	-0-	0.14	-0-	1.20
Intake/Treat/Pump	3.65	-0-	-0-	-0-	-0-	-0-	-0-	1.20	4.90
Total Construction	$5.83	$1.13	$3.76	$3.35	$4.66	$4.25	$4.83	$1.20	$29.03
Other Costs	1.46	0.28	0.94	0.84	1.17	1.06	1.21	0.30	7.25
Contingencies	1.17	0.23	0.75	0.67	0.93	0.85	0.97	0.24	5.80
Total Project Cost	$8.45	$1.63	$5.46	$4.85	$6.76	$6.16	$7.00	$1.74	$42.08

APPENDIX A

Cannon Ball Local District Council
Cannon Ball, North Dakota
April 8, 1988

TO WHOM IT MAY CONCERN:

The Cannon Ball Local District Council at a previous meeting held during the year of 1987, are on record to have the Standing Rock Sioux Tribal Council give the Cannon Ball Community water system top priority in the construction process of the Tribe's Municipal, Rural, and Industrial water development projects.

The attached resolution will reaffirm Cannon Ball communities' position. A signed and certified copy of this resolution will follow at a later date.

Please include this resolution as part of any appropriations requests or hearing record to the United States Congress.

Pete Red Tomahawk, Chairman
Cannon Ball Local District Council

ATTEST:

Charles W. Murphy
Chairman,
Standing Rock Sioux Tribe

R E S O L U T I O N

WHEREAS, a recent study was conducted by DeWild Grant Reckert & Associates, an Architecture Engineering & Planning firm of Rock Rapids, Iowa, in coordination with the U.S. Public Health Service, which indicated the Cannon Ball Community and adjacent individual housing units' water quality has been a continuing problem. The present domestic and drinking water sources are often poorly constructed, low capacity groundwater wells or hauled water to underground cisterns; and

WHEREAS, these sources are often contaminated with bacteria or underground minerals; thus, providing an inadequate quality of water which is costly to maintain and operate; and

WHEREAS, our present supply of water is plagued by high iron and manganese levels which stain plumbing fixtures and deteriorates piping, as well as, high sulfate levels which causes severe odor problems and a laxative effect on some people. Furthermore, the

high iron and manganese levels make it difficult to maintain a safe chlorine residual throughout the distribution system which can result in serious outbreaks of water borne diseases; and

NOW THEREFORE BE IT RESOLVED, that the Cannon Ball Local District representing approximately 800 residents and individual homeowners, hereby supports the Standing Rock Municipal, Rural, and Industrial Phase I construction as an alternate ideal solution, which will provide the much needed water to the Cannon Ball community in a relatively short period of time through a combination of new and existing facilities from the Fort Yates water system. This subsequent construction phase will become a part of the long-term solution for water supply to the entire reservation; and

BE IT FURTHER RESOLVED, that copies of this resolution be sent to our respective Congressional delegation in Washington, D.C., urging for their support for Standing Rock MR&I water development projects authorized under the Garrison Diversion Unit Reformulation Act of 1986 (PL 99-294) and any Federal appropriations requests the Tribe determines and demonstrates capability of meeting specific objectives for water needs and development.

CERTIFICATION

We, the undersigned, Chairman and Secretary of the Cannon Ball Local District Council, hereby certify that ___ members constituting a quorum were present at a meeting thereof duly and regularly called, noticed, convened and held on the ___ day of _____, 1988, that the foregoing resolution was duly adopted by the affirmative vote of ___ members, with ___ opposing and ___ not voting.

Dated this ____ day of _____, 1988.

_____
Pete Red Tomahawk, Sr., Chairman
Cannon Ball Local District Council

_____
Rita Hunte, Secretary
Cannon Ball Local District Council

APPENDIX B

R E S O L U T I O N

WHEREAS, a study was conducted on groundwater quality for nine (9) Indian reservations in South Dakota by the American Indian Task Force of the Rural Coalition, office located in Washington, D.C. and issued a report in February 1988, and;

WHEREAS, in summary, the study indicated that:

(a) Groundwater in the Northern Plains is a precious resource, especially in this dry region. In South Dakota, groundwater is used for drinking, household, livestock, irrigation, and business development. Groundwater also recharges springs, streams and lakes, and maintains plant growth in places.

(b) Protection of groundwater quality is important to maintain our livelihood, health, environment and life. Poor or degraded groundwater quality can affect human health, livestock, wildlife, plant life, and equipment or machinery. Poor groundwater quality is expensive in terms of cost to treat the water, cost of medical bills, lost productivity of plants or animals, and more frequent replacement of equipment.

(c) Contamination of groundwater is often permanent. Once chemicals make their way into the groundwater, they are nearly impossible to remove. The lack of oxygen and light underground slows the breakdown of chemicals. In some cases, contaminants can be pumped out; but this is not usually the case.

WHEREAS, in 1985, the Standing Rock Sioux Tribe conducted a feasability study of the reservation water supply system, retaining the engineering firm of DeWild Grant Rechert & Associates Co. of Rock Rapids, Iowa, which indicated that an adequate supply of good quality water is needed by many of the 8,278 Indians, future projection of 13,450 and 3,838 non-Indian landowners, at 1,206 individuals and 18 community service locations, and;

WHEREAS, Board of Corson County Commissioners represents the 2,559 non-Indian population residing in Corson County of the Standing Rock Indian Reservation, of whom lease approximately 250,000 acres of Indian trust land in order to maintain their primary industry of agriculture to full development, as well as, increase their quality of life and health, are dependent upon availability of a plentiful and high quality of water supply.

WHEREAS, the proposed construction of the Standing Rock Municipal, Rural, & Industrial for a sole source water distribution system for Sioux County, North Dakota, and Corson County, South Dakota, will protect the health and benefit all water users, Indian and non-Indians alike, with the proper and necessary uniform standards developed under current Federal laws and in compliance with the Environmental Protection Agency, Safe Drinking Water Act, and U.S. Public Health, as versus cost and expense of treatment of individual wells and under ground aquifer type water systems.

NOW THEREFORE BE IT RESOLVED, the Board of Corson County Commissioners hereby supports the construction of the Standing Rock Municipal, Rural, & Industrial water development projects authorized under the Garrison Diversion Unit Reformulation Act of 1986 (PL 99-294) and any appropriation requests the Standing Rock Sioux Tribe determines and demonstrates capability of meeting its objectives of water needs and development.

BE IT FURTHER RESOLVED, that copies of this resolution be sent to our respective Congressional delegation in Washington, D.C. urging their support.

C E R T I F I C A T I O N

Motion by Speidel seconded by Gill to approve the above resolution. Roll call vote, Speidel, yes; Gill, yes; Seiler, yes; Zielke, yes; Keller, yes; Motion carried.

APPENDIX C

R E S O L U T I O N

WHEREAS, a study was conducted on grounwater quality for nine (9) Indian reservations in South Dakota by the American Indian Task Force of the Rural Coalition, office located in Washington, D.C. and issued a report in February 1988, and;

WHEREAS, in summary, the study indicated that (a) Groundwater in the Northern Plains is a precious resource, especially in this dry region. In South Dakota, groundwater is used for drinking, household, livestock, irrigation, and business development. Groundwater also recharges springs, streams and lakes, and maintains plant growth in places.

(b) Protection of groundwater quality is importaant to maintain our livelihood, health, environment and life. Poor or degraded groundwater quality can affect human health, livestock, wildlife, plant life, and equipment or machinery. Poor groundwater quality is expensive in terms of cost to treat the water, cost of medical bills, lost productivity of plants or animals, and more frequent replacement of equipment.

(c) Contamination of groundwater is often permanent. Once chemicals make their way into the groundwater, they are nearly impossible to remove. The lack of oxygen and light underground slows the breakdown of chemicals. In some cases contaminants can be pumped out, but this not usually the case.

WHEREAS, in 1985, the Standing Rock Sioux Tribe conducted a feasability study of the reservation water supply system, retaining the engineering firm of DeWild Grant Rechert & Associates Co. Rock Rapids, Iowa, which indicated that an adequate supply of good quality water is needed by many of the 8,278 Indians, future projection of 13,450, and 3,838 non-Indian landowners, at 1,206 individuals and 18 community service locations, and;

WHEREAS, The Board of Sioux County Commissioners represent the 1,279 non-Indian population residing in Sioux County of the Standing Rock Indian reservation, of whom lease approximately 150,000 acreas of Indian trust land in order to maintain their primary industry of agriculture to full development, as well as, increase their quality of life and health, are dependent upon availability of a plentiful and high quality of water supply.

WHEREAS, the proposed construction of the Standing Rock Municipal, Rural, & Indistrial for a sole source water distribution system for Sioux County, North Dakota, and Corson County, South Dakota, will protect the health and benefit all water users, Indian and non-Indians alike, with the proper and necessary uniform standards developed under current Federal laws and in compliance with Environmental Protection Agency, Safe Drinking Water Act, and U. S. Public Health, as versus cost and expense of treatment of individual wells and underground aquifer type water systems.

NOW, THEREFORE, BE IT RESOLVED, that The Board of Sioux County Commissioners hereby support the construction of the Standing Rock Muunicipal, Rural, & Industrial water development projects authorized under the Garrison Diverson Unit Reformulation Act of 1986 (PL 99-294) and any appropriation requests Standing kock Sioux Tribe determines and demonstrates capability of meeting its objectives of water needs and development.

BE, IT, FURTHER, RESOLVED, that copies of this resolution be sent to our respective Congression delegation in Washington, D.C., urging their support.

Commissioner Snider made a motion to adopt above said resolution. Second by Commissioner Gullickson. All members voted aye and motion carried.

NOW, THEREFORE, BE IT RESOLVED, that The Board of Sioux County Commissioners adopted said resolution on April 5, 1988.

Renel Jochim, Auditor
Sioux County, North Dakota

Simon Dillman, Chairman
Board of County Commissioners

APPENDIX D

R E S O L U T I O N

WHEREAS, a study was conducted on groundwater quality for nine (9) Indian reservations in South Dakota by the American Indian Task Force of the Rural Coalition, office located in Washington, D.C. and issued a report in February 1988, and;

WHEREAS, in summary, the study indicated that:

(a) Groundwater in the Northern Plains is a precious resource, especially in this dry region. In South Dakota, groundwater is used for drinking, household, livestock, irrigation, and business development. Groundwater also recharges springs, streams and lakes, and maintains plant growth in places.

(b) Protection of groundwater quality is important to maintain our livelihood, health, environment and life. Poor or degraded groundwater quality can affect human health, livestock, wildlife, plant life, and equipment or machinery. Poor groundwater quality is expensive in terms of cost to treat the water, cost of medical bills, lost productivity of plants or animals, and more frequent replacement of equipment.

(c) Contamination of groundwater is often permanent. Once chemicals make their way into the groundwater, they are nearly impossible to remove. The lack of oxygen and light underground slows the breakdown of chemicals. In some cases, contaminants can be pumped out; but this is not usually the case.

WHEREAS, in 1985, the Standing Rock Sioux Tribe conducted a feasability study of the reservation water supply system, retaining the engineering firm of DeWild Grant Rechert & Associates Co. of Rock Rapids, Iowa, which indicated that an adequate supply of good quality water is needed by many of the 8,278 Indians, future projection of 13,450 and 3,838 non-Indian landowners, at 1,206 individuals and 18 community service locations, and;

WHEREAS, the State Line Rural Water Commission represents the 2,559 non-Indian population residing in Corson County of the Standing Rock Indian Reservation, of whom lease approximately 250,000 acres of Indian trust land in order to maintain their primary industry of agriculture to full development, as well as, increase their quality of life and health, are dependent upon availability of a plentiful and high quality of water supply.

WHEREAS, the proposed construction of the Standing Rock Municipal, Rural, & Industrial for a sole source water distribution system for Sioux County, North Dakota, and Corson County, South Dakota, will protect the health and benefit all water users, Indian and non-Indians alike, with the proper and necessary uniform standard developed under current Federal laws and in compliance with the Environmental Protection Agency, Safe Drinking Water Act, and U.S. Public Health, as versus cost and expense of treatment of individual wells and under ground aquifer type water systems.

NOW THEREFORE BE IT RESOLVED, the State Line Rural Water Commission hereby supports the construction of the Standing Rock Municipal, Rural, & Industrial water development projects authorized under the Garrison Diversion Unit Reformation Act of 1986 (PL 99-294) and any appropriation requests the Standing Rock Sioux Tribe determines and demonstrates capability of meeting its objectives of water needs and development.

BE IT FURTHER RESOLVED, that copies of this resolution be sent to our respective Congressional delegation in Washington, D.C. urging their support

C E R T I F I C A T I O N

APPROVED AND SIGNED THIS ____ DAY OF APRIL 1988:

BY THE STATELINE RURAL WATER COMMISSION

(notarization)

George Mortenson
George Mortenson, Chairman

Dorothy K. Weist
Dorothy Weist, Vice-Chairman

Wallace Schott
Wallace Schott, Member

Marvin Pleinis
Marvin Pleinis, Member

APPENDIX E

RESOLUTION I-88

WHEREAS, a recent study was conducted by DeWild Grant Reckert & Associates, Architecture Engineering & Planning firm, Rock Rapids, Iowa, in coordination with U.S. Public Health Service, which indicated in the Cannon Ball community and adjacent individual housing units that water quality has been a continuing problem. Present domestic and drinking water sources are often poorly constructed or low capacity groundwater wells or haul water to underground cisterns, and

WHEREAS, these sources are often contaminated with bacteria or underground minerals, provide and inadequate quality of water, and are costly to maintain and operate, and

WHEREAS, our present supply of water is plaqued by high iron and manganese levels which stain plumbing fixtures and deteriorates piping, as well as, high sulfate levels which cause severe oder problems and have a laxative effect on some people. Further, the high iron and manganese levels make it difficult to maintain a safe chlorine residual throughout distribution system and can lead to serious outbreaks of water borne diseases.

NOW, THEREFORE, BE IT RESOLVED, that the Fort Yates Local District representing in excess of 1,000 residents and individual homeowners, hereby supports the Standing Rock Municipal, Rural and Industrial Phase I construction as an alternate and ideal solution, which will provide much needed water to our individual rural Indian and Non-Indian residents in a relatively short period of time through a combination of new and existing facilities from Fort Yates water system, this subsequent construction phase will become a part of the long-term solutions for water supply to the entire reservation, and

BE IT FURTHER RESOLVED, that copies of this resolution be sent to our respective Congressional delegation in Washington, D.C., urging for their support for Standing Rock MR&I water development projects authorized under the Garrison Diversion Unit Reformulation Act of 1986 (PL-294) and any Federal appropriation requests the Tribe determines and demonstrates capability of meeting its objectives of water needs and development.

CERTIFICATION

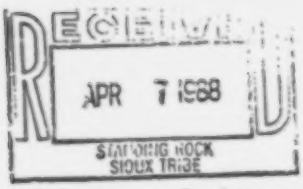
We, the undersigned, Chairman and Secretary of the Fort Yates Local District, hereby certify that 45 members constituting a quorum, were present at a meeting thereof duly and regularly called, noticed, convened and held on the 5th day of April, 1988, and that the foregoing resolution was duly adopted by the affirmative vote of 25 members, with 0 opposing and with 20 not voting.

Thomas Bullhead, Chairman
Fort Yates Local District Council

Bernadine Goudreau, Secretary
Fort Yates Local District Council

APPENDIX F

LETTER FROM DONALD B. BAD MOCCASIN, P.E., INDIAN HEALTH SERVICES, DEPARTMENT OF HEALTH AND HUMAN SERVICES



Aberdeen Area
Indian Health Service
Federal Building, Room 309
Aberdeen SD 57401

April 5, 1988

Our Reference: Environmental Health Programs

Charles Murphy, Chairman
Standing Rock Sioux Tribal Council
Fort Yates, North Dakota 58538

Dear Mr. Murphy:

The Indian Health Service wishes to take this opportunity to support the Standing Rock Sioux Tribe's efforts to secure funding for a reservation-wide rural water system. IHS has included this rural water system in our Unmet Needs Priority List, however, no funding is available. We also do not anticipate the needed funding will become available in the near future.

The Fort Yates water treatment plant currently has extra capacity, enough to supply the community of Cannon Ball. A water main from Fort Yates to Cannon Ball could serve many scattered homesites and would eventually be an integral part of the rural water system. The Fort Yates water would represent a significant water quality increase to the residents of Cannon Ball in addition to providing improved services to the intermediate homes. IHS fully supports the Tribe's decision to make this water main Phase I of the proposed rural water system.

If we can be of further assistance, please feel free to contact the Environmental Health Programs at the above address or at telephone number 605/225-0250, ext. 451.

Sincerely,

Bruce

Donald B. Bad Moccasin, P.E.
Program Management Officer

cc: Chief, SFCS
Field Engineers, Mobridge
Service Unit Director, Fort Yates

STATEMENT OF OLIVER GOARD, REPRESENTING THE DEVILS LAKE SIOUX TRIBE

Senator BURDICK. Thank you all for being here today.

The record is going to remain open until April 22. Those who wish to file any supplemental statements, you should send them in by that time.

With that, let's hear from Mr. Goard.

Mr. GOARD. I have a written statement here from my tribal chairman, if you would have patience, sir.

Mr. Chairman, my name is Oliver Goard. I was delegated and authorized to represent our tribe. I have a written statement from our tribal chairman, Mr. Carl McKay. I would like to read it into the record, if you don't mind.

Mr. Chairman, my name is Carl R. McKay and I am the chairman of the Devils Lake Sioux Tribe of the Fort Totten Indian Reservation. I appreciate your giving me the chance to testify in this area of critical importance to my tribe.

Under section 5 of the Garrison Diversion Unit Reformulation Act of 1986 (Public Law 99–294), the Secretary of Interior is authorized and directed to construct, operate, and maintain such municipal, rural, and industrial water systems as he deems necessary to meet the economic, public health, and environmental needs of the Fort Berthold, Standing Rock, and Fort Totten Indian Reservations.

Preliminary studies by USBR, the Fort Totten decision document, has identified candidate MR&I needs exceeding $50 million. At present, only $4.5 million is authorized and allocated for use on my reservation. This concerns the entire Devils Lake Sioux Tribe.

The tribe is working with USBR in their planning process to prioritize our overall needs and utilize the $4.5 million to meet our most critical needs under a phase I project. We have elected to contract the design and construction administration services with private entities to allow the available monies to be extended as far as possible.

Our goal in phase I is to provide a safe, reliable, and potable water supply to the four primary Indian communities on the reservation. This will meet the needs of the majority of the Indian households. Selected rural water users along the main trunk line will be served if funding is available.

The Devils Lake Sioux Tribe can begin design on our phase I development plan in this fiscal year and be in a position to initiate the construction of key facilities by spring 1989. The tribe wants the opportunity to construct as much of our MR&I system in 1989 as possible. There is no inflation clause in the Public Law 99–294 legislation. As such, each year that construction is delayed results in more Indian households not being supplied with badly needed potable water supplies under our phase I project.

In summary, the goal of the Devils Lake Sioux Tribe for fiscal year 1989 is to complete the final design for the entire phase I system and to construct key project facilities, such as well fields, pumping plants, treatment plants, and main pipelines.

Under an accelerated schedule, approximately $2 million of fiscal year 1989 funding is required to meet this goal. An intermediate or baseline goal would consist of completing the final design and construct only the well field, pumping plant, and treatment plant. About $1 million is needed to meet this baseline level of construction on the Fort Totten Indian Reservation. At a minimum, we want $500,000 to meet the final design of all components of our MR&I system during fiscal year 1989.

The Devils Lake Sioux Tribe has done all that has been asked of them in the USBR planning process. Agreed upon schedules between the United States and the tribe will allow the planning, design and construction of either the baseline or accelerated work programs.

Please allow us to meet these goals by providing adequate funding for the Devils Lake Sioux Tribe's MR&I efforts in fiscal year 1989.

Respectfully.

Senator BURDICK. Thank you very much.

This concludes the testimony from this particular panel. Thank you all for coming.

[The statement follows:]

STATEMENT OF RONALD E. BILLSTEIN, HKM ASSOCIATES, ENGINEERING CONSULTANT TO THE THREE AFFILIATED TRIBES OF THE FORT BERTHOLD RESERVATION

BACKGROUND INFORMATION

Mister Chairman, my name is Ronald E. Billstein and I am a senior project engineer at HKM Associates of Billings, Montana. Our firm has represented the Three Affiliated Tribes throughout the Plan Formulation Phase of investigation where the total municipal, rural and industrial (MR&I) needs of the Reservation were identified by the U.S. Bureau of Reclamation (USBR).

This report documented needs on the Fort Berthold Reservation which far exceeded the funds authorized to be appropriated under the GDU Reformulation Act of 1986 (P.L. 99-294). The available monies ($8M) were then programmed to meet the most critical needs on the Reservation. USBR and the Tribe will seek additional monies to meet total Tribal MR&I needs. The $8M Phase 1 plan consists of the following elements.

1. Rehabilitate the existing systems at the Indian communities of Mandaree and Twin Buttes ($0.9M).

2. Develop the Four Bears and rural Four Bear Extension System ($1.3M).

3. Develop the White Shield Area ($5.8M).

The process to be utilized to design and construct the above noted projects is as follows.

1. Complete Definite Plan Reports for each development component.

2. Complete Construction Design and Specifications (USBR or private firm).

3. Construct project with Construction Administration by USBR or private firm.

The following sections will: document the status of the Phase 1 MR&I investigations on the Fort Berthold Reservation; delineate the Tribal goals for construction in F.Y. 1989; and

document the level of funding needed to meet these Tribal development goals.

STATUS OF INVESTIGATIONS

Role of HKM Associates

The three Affiliated Tribes have elected to complete the design and construction administration of the Phase 1 projects by use of a private engineering firm with technical oversight by the U.S. Bureau of Reclamation. HKM Associates has been selected by the Three Affiliated Tribes to complete this work. To this end, we have been fully involved in the USBR Definite Plan Report investigations and have been contracted to develop substantial technical components of the work developed for the Twin Buttes and Mandaree systems. We are presently negotiating with USBR to complete major work elements of the remaining Phase 1 Definite Plan Reports. Once completed, final design and specifications can be completed and the construction contractors selected. HKM will then provide construction administration services on the project.

Status of Phase 1 Projects

The Definite Plan reports for Twin Buttes and Mandaree are anticipated to be completed by May 1, 1988. Construction design and specifications are projected to be finalized by October 1, 1988. The Contractor should be under contract by January 1, 1989.

The Definite Plan report for the Four Bears area is underway and is anticipated to be completed by August 1, 1988. Construction design and specifications are projected to be finalized by December 31, 1988. The Contractor should be under contract by March 15, 1989.

Relative to the White Shield Area, the DPR is scheduled for completion by November 2, 1988. Final design and specifications will be complete by September 30, 1989. Special design features such as the lake intake/pumping plant, treatment plant, and main trunk line to the town of White Shield will be expedited with construction design and specifications scheduled for completion by March 1, 1989. Construction of these design elements can be substantially completed by September 30, 1989. Construction of all the

remaining components of the White Shield Development Area should be complete by September 30, 1990.

The above progress schedules are contingent upon the USBR administered Definite Plan Reports being completed on time and contractual arrangements immediately finalized to allow the Tribe to contract with HKM Associates for construction design and specifications no later than June 1, 1988.

1989 FUNDING REQUESTS

The overall goal of the Three Affiliated Tribes is to complete sufficient construction in 1989 to allow safe, potable water to be supplied to all the primary Indian communities on the Reservation. Under the expedited schedule identified in the previous section, approximately $4M of funding in 1989 is needed to meet this goal. Future construction in F.Y. 1990 would extend service to the rural Indian households in the extensive White Shield MR&I area.

An intermediate or baseline goal would be to complete construction of the Twin Buttes, Mandaree, and Four Bears systems and to finalize the construction design and specifications for the White Shield area in F.Y. 1989. Approximately $2.5M is required to meet this baseline level of construction on the Fort Berthold Reservation.

California Water Resource Development Projects

STATEMENT OF HON. ALAN CRANSTON, U.S. SENATOR FROM CALIFORNIA

Senator Cochran [presiding]. Our next panel will include Members of the Senate and the House from the state of California.

I see that Senator Alan Cranston and Congressman Glenn Anderson are here, along with Senator Pete Wilson.

We welcome you. We appreciate you being here and apologize for the delay in getting you to the witness table.

Senator Cranston, you may proceed.

Senator Cranston. Thank you very much, and we appreciate your being here so that we can testify to you.

I am delighted to be with Pete Wilson and with my long-time friend and collaborator from California, Glenn Anderson, to testify before you. I am delighted to appear before the Senate Appropriations Subcommittee on Energy and Water Development to support fiscal year 1989 funding for the Bureau of Reclamation and Army Corps of Engineers water programs in California.

I intend to be very brief. I know what a long schedule you have.

As you know, the Bureau has requested $172,772,000 for 1989 for various programs in California, compared with $164 million appropriated for these programs in 1988. The Corps has requested $142,722,000, virtually the same amount as appropriated for Corps projects in California in 1988.

I am pleased to note that the budget contains sufficient funds for many vitally important California projects, including Caliente Creek, Santa Ana River mainstem, Merced County streams, Redbank Fancher creeks, northern California streams, American River watershed study, and the San Joaquin Valley conveyance study.

Today, you will be hearing from the California water community, represented by the California Water Commission and the California Marine Affairs and Navigation Conference. They support the projects in the administration's budget. At the same time, they will be asking for some augmentation to address additional needs. I ask that you give their requests your careful consideration.

I intended to provide a long list of projects that I think are worthy. I will not read all that to you, but ask that it appear in the record in my longer statement.

Senator COCHRAN. It will appear in the record, and we thank you for that, Senator.

Senator CRANSTON. What I would like to do is just comment very briefly on just two of these meritorious projects to illustrate and to emphasize the fact that there are very real needs not covered in the administration's budget.

UNITED WATER CONSERVATION DISTRICT LOAN

The first of the two examples is United Water Conservation District. The United Water Conservation District project is important to stop sea water intrusion in Ventura County. The project includes construction of a permanent diversion facility across the Santa Clara River, construction of a conveyance canal, and construction of a desilting basin.

Last year, Congress appropriated $5.5 million for the project, enabling the district to construct the desilting basin and the diversion canal this year. However, the administration has not requested any monies for the project in 1989. The United Water Conservation District is requesting a minimum of $6 million in 1989 for foundation work, the next phase in construction. Seemingly it would make sense, once started, to carry on.

REDONDO BEACH BREAKWATER, CALIFORNIA

Second example is the Redondo Beach Breakwater. This past January severe storms struck at Redondo Beach, causing more than $20 million in damages. Most of the damage was directly attributable to the fact that the existing breakwaters are inadequate.

For a number of years, the Corps of Engineers has been studying the need for breakwater improvements. Now the Corps is proposing increasing the height of the north breakwater and extending the south breakwater and there is $250,000 in the budget for the preconstruction and design work.

However, in order to expedite this urgently needed project, the city of Redondo Beach is asking for an additional $250,000. This would permit the Corps to complete all necessary work so actual construction could commence in 1990. If we don't have this help, there will be delay and the risk of further costly damage.

Those two, I think, illustrate quite clearly that requests that are being submitted to you in more detail are very worthy. So, let me finally say, Mr. Chairman, other Californians appearing before this subcommittee today will discuss other equally meritorious projects.

Again, I urge you to give thorough consideration to these requests. On behalf of California, I deeply appreciate your attention and that of the other members of the committee and the staff that support you and thank you for the assistance you have given in past years for the California water resources program.

Thank you very, very much.

Senator COCHRAN. Thank you, Senator Cranston, for your excellent statement. All of it will be included in the record and we appreciate your summarizing and highlighting the statement for us.

[The statement follows:]

STATEMENT OF SENATOR CRANSTON

Mr. Chairman, it's a pleasure to appear before the Senate Appropriations Subcommittee on Energy and Water Development this afternoon to support Fiscal Year 1989 funding for the Bureau of Reclamation and Army Corps of Engineers water programs in California.

As you know, the Bureau has requested $172,772,000 for 1989 for various programs in California -- as compared with $164,000,000 appropriated for these programs in 1988. The Corps has requested $142,722,000 -- virtually the same amount as appropriated for Corps projects in California in 1988.

I'm pleased to note that the budget contains sufficient funds for many vitally important California projects including Caliente Creek, Santa Ana River Mainstem, Merced County Streams, Redbank Fancher Creeks, Northern California Streams--American River Watershed Study, and the San Joaquin Valley Conveyance Study.

Today you will be hearing from the California water community, represented by the California Water Commission and the California Marine Affairs and Navigation Conference. They support the projects in the Administration's budget. At the same time, they will be asking for some augmentations to address additional needs. I ask that you give their requests your careful consideration.

Specifically, the California Water Commission is requesting additional monies for Goleta Vicinity Streams investigation, Santa Barbara County Streams study, San Francisco Bay Shoreline study, Northern California Streams--Yuba River Watershed investigation, San Joaquin River Basin study, Warm Springs Lake, New Melones Lake, Sacramento River Flood Control Project,

Inspection of Completed Works--Sacramento River, Off Stream Storage Investigation, Auburn-Folsom South Unit, San Felipe Division, San Bernardino Valley Ground Water Project, San Bernardino County Loan, United Water Conservation District Loan, Central Valley Project Operation and Maintenance, and the Coleman National Fish Hatchery.

The California Marine Affairs and Navigation Conference is requesting additional monies for Point Mugu to San Pedro Breakwater study, Rancho Palos Verdes study, Coast of California Storm and Tidal Waves study, Newport Bay Harbor study, North Coast of Los Angeles County study, San Leandro Bay study, Santa Cruz Harbor study, West Newport Beach Harbor study, Sunset Harbor study, Los Angeles-Long Beach Harbors design, San Francisco Bay Shoreline design, Ventura Marina design, Port San Luis construction, Channel Islands Harbor and Cabrillo Beach small navigation projects, Channel Islands Harbor dredging, Crescent City Harbor dredging, Los Angeles-Long Beach Harbor dredging, Los Angeles-Long Beach Harbor model studies, Marina Del Rey dredging, Morro Bay Harbor dredging, Napa River dredging, Noyo River and Harbor dredging, Oceanside Harbor dredging, Petaluma River dredging, Port San Luis breakwater repair, San Diego Harbor deepening, San Diego River and Mission Bay storm damage repairs, San Leandro Marina dredging, and San Francisco Harbor and Bay Drift Removal.

I would like to comment briefly on a few of these meritorious projects to emphasize the fact there are very real needs not covered in the Administration's budget.

United Water Conservation District

The United Water Conservation District project is important to stop sea water intrusion in Ventura County. The project includes construction of a permanent diversion facility across the Santa

Clara River, construction of a conveyance canal, and construction of a desilting basin. Last year Congress appropriated $5.5 million for the project, enabling the District to construct the desilting basin and diversion canal this year. However, the Administration has not requested any monies for the project in 1989. The United Water Conservation District is requesting a minimum of $6 million in 1989 for foundation work, the next phase in construction.

San Felipe Project

Under the San Felipe Project, the Bureau of Reclamation has reserved 19,000 acre feet of water until 1990 for the Watsonville area. The Pajaro Valley Water Management Agency is now in a position to pursue this allocation and in 1987 notified the Bureau of its intent to contract for this water supply. Earlier this year the Bureau began work on the feasibility report using funds available to the Bureau in the 1988 budget. However, there are no funds in the Administration's 1989 request to continue this study. Given the 1990 deadline, it's vital the Bureau receive the funds to complete the study which is necessary in order to convey water to the Pajaro Valley Water Management Agency. The Parajo Valley Water Management Agency is requesting an additional $300,000 for this purpose.

Additionally, the Administration has failed to include monies in its 1989 budget to cover activities necessary for the transfer of certain San Felipe Project facilities to the San Benito County Water Conservation and Flood Control District. As part of the transfer stipulations, the Bureau has agreed and is obligated to remedy a number of deficiencies in the project. These include corrosion problems and safety items. The District is requesting an appropriation of $940,000 for this work.

Redondo Beach Breakwater

This past January severe storms struck at Redondo Beach, causing more than $20 million in damages. Most of the damage was directly attributable to the fact that the existing breakwaters are inadequate. For a number of years, the Corps of Engineers has been studying the need for breakwater improvements. Now the Corps is proposing increasing the height of the north breakwater and extending the south breakwater and there is $250,000 in the budget for the preconstruction and design work. However, in order to expedite this urgently needed project, the City of Redondo Beach is asking for an additional $250,000. This would permit the Corps to complete all necessary work so actual construction could commence in 1990.

Central Valley Project Operation and Maintenance

Additional money is needed to keep the Central Valley Project in efficient operating condition for proper service. The President's budget calls for $44,959,000 for maintenance of existing facilities. While this is higher than the FY 1988 appropriation, it is still far short of what is actually needed. It is my understanding there are 16 high priority maintenance projects which have been deferred for too long a time. The Central Valley Project Water Association is requesting $8.6 million for the Bureau to undertake the most urgently needed maintenance work.

Mr. Chairman, other Californians appearing before the Subcommittee today will discuss other equally meritorious projects. Again, I urge you to give thorough consideration to these requests.

On behalf of California, I deeply appreciate your attention and the support you and the other members of this Committee have given in past years for the California water resources program.

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

Senator COCHRAN. I will call on Senator Wilson now.

We welcome you to the committee, Pete.

Senator WILSON. Thank you very much, Mr. Chairman.

Mr. Chairman, as in years past, I am very much appreciative of the subcommittee's willingness to take the time to hear what California has to say about its energy and water appropriation needs for the coming fiscal year.

I always look forward to this time each year as an opportunity to get together with some fellow Californians here in Washington during one of our 2 days of spring. They usually manage to time that very well.

But, what I really hope is that, as in years past, the message they bring us is as informative and useful to the committee as it is to me.

This year, California continues to regroup from the devastating floods of 1986 and to recover from some serious 1987 coastal flooding, and is preparing for what promises to be another exceptionally dry year in the Central Valley.

There is an irony to the way the gods treat California, we are either given too much water or too little, and they can't seem to quite allocate it by time and place as would make sense.

Suffice it to say, Mr. Chairman, that the appropriation needs for California have hardly diminished from what they have been in years past. In this regard, I would highly recommend to the committee the recommendations that have been assembled by the California Marine Affairs and Navigation Conference and the California Water Commission.

I am very proud of these organizations in that they have established a tradition; I think a very meritorious and very thoughtful tradition, thoughtful of the needs of the committee. What they have done is amalgamated once again the numerous requests for appropriations coming from throughout this vast state and organized them into a single useful package of information for the committee's consideration.

CVP OPERATION AND MAINTENANCE

As an example of the kind of work that the water commission does, let me invite your attention to the President's request for operation and maintenance funding for the Central Valley project.

The President requested $44.9 million for the Central Valley project operations and maintenance. California water experts judged this amount to be barely enough, if that, to continue existing operations and maintenance at a barebones level. Nothing is left over for some of the fundamental O&M work that is required to preserve the huge federal investment that has been made in the Central Valley project.

After careful review of the CVP's O&M needs, the water commission was requested to support a $12.6 million add-on to the President's request of $44.9 million. Instead of just rubber-stamping this $12.6 million recommendation, the water commission took the time to do its own analysis and to determine what was truly needed and what could be put

off until another day, and they came up with their recommendation that only $8.6 million is needed in addition to the President's budget request for CVP operations and maintenance.

The water commission has subjected all funding requests, even the President's requests, to this same kind of meticulous rigorous analysis. Their final recommendations deserve the committee's careful attention.

In addition to the water commission recommendation, there are a number of important Corps flood control and harbor maintenance projects that need to be funded. Most of these projects will be addressed by the C-MANC testimony and others that you will hear from today.

Redondo Beach, Kings Harbor, Calif.

Typifying the Corps funding needs for California is the $500,000 that is needed to do preconstruction engineering and design work for the Redondo Beach-King Harbor breakwater project. The need for this money arises from the devastating effects of a coastal storm last January that did over $17 million worth of damage to King Harbor alone. I happened to be in California at the time and had an opportunity to view that wreckage, to view the devastation, both by helicopter and by an on-sight inspection just after the harbor had been hit by the storm.

Most businesses within the harbor were damaged, and some of the largest were destroyed. Several hundred boats in King Harbor were damaged and countless jobs were lost as a direct consequence of that terrible storm.

Even though the Corps has requested only $250,000 to do the preconstruction work on preparing the King Harbor breakwater, it is clear that $500,000 can be spent in fiscal year 1989 that would enable the Corps to go to full construction in fiscal year 1990.

Mr. Chairman, I cannot overemphasize the need for early action, because these storms seem to be becoming an annual occurrence. The need to deal with the strengthening and the increasing of the breakwater is simply a means of ensuring that we don't, year after year, come back and at this time hear the same stories, the same requests that we can hopefully avoid by taking preventive action in a timely fashion.

Mr. Chairman, I mention these particular requests only as illustrations of what California's needs are. There are many, many more very needy projects, very worthy projects, about which you will hear in greater detail from the witnesses that follow.

As in years past, I will not advocate additions to the President's budget request unless the committee decides that additional money is available for energy and water appropriations. But in that event, I do urge the committee to ensure that California receives its fair share of any appropriations made in addition to the President's budget request, because, very candidly, the requests you will hear today have been very carefully thought out. They have been the result of a genuinely meticulous effort to achieve the minimum that is required in order to do the prudential thing and avoid greater costs in the future.

Once again, I thank you in particular and the subcommittee for its willingness to hear these appropriation requests. California has done well by this subcommittee in the past and I sincerely hope that we can continue the kind of very constructive working relationship that we have enjoyed with the subcommittee. I look forward to working with the subcommittee as we continue to consider the 1989 energy and appropriations bill.

Mr. Chairman, I thank you, and now I am very pleased to yield to my distinguished colleague from the House, the Honorable Glenn Anderson.

Senator COCHRAN. Thank you, Senator. We appreciate having the benefit of your testimony and your continued guidance in these matters affecting the state of California. We appreciate that very much.

Senator WILSON. Thank you, sir.

[The statement follows:]

STATEMENT OF SENATOR WILSON

MR. CHAIRMAN, AS IN YEARS PAST, I AM APPRECIATIVE OF THE SUBCOMMITTEE'S WILLINGNESS TO TAKE THE TIME TO HEAR WHAT CALIFORNIA HAS TO SAY REGARDING ITS ENERGY AND WATER APPROPRIATION NEEDS FOR FISCAL YEAR 1989. I LOOK FORWARD TO THIS WEEK EVERY YEAR AS AN OPPORTUNITY TO GET TOGETHER WITH MY FELLOW CALIFORNIANS HERE IN WASHINGTON. I HOPE THAT THE MESSAGE THEY BRING BACK IS AS INFORMATIVE AND USEFUL TO YOU AS IT IS FOR ME.

THIS YEAR, CALIFORNIA CONTINUES TO RE-GROUP FROM THE DEVASTATING FLOODS OF 1986, RECOVER FROM SOME SERIOUS 1987 COASTAL FLOODING, AND IS PREPARING FOR WHAT PROMISES TO BE ANOTHER EXCEPTIONALLY DRY YEAR IN THE CENTRAL VALLEY.

SUFFICE TO SAY, THE APPROPRIATION NEEDS FOR CALIFORNIA HAVE HARDLY DIMINISHED FROM WHAT THEY HAVE BEEN IN YEARS PAST. IN THIS REGARD, I WOULD HIGHLY COMMEND TO THE COMMITTEE THE RECOMMENDATIONS THAT HAVE BEEN ASSEMBLED BY THE CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE (C-MANC) AND THE CALIFORNIA WATER COMMISSION. THESE ORGANIZATIONS CONTINUE THEIR OUTSTANDING TRADITION OF AMALGAMATING THE NUMEROUS REQUESTS FOR APPROPRIATIONS FROM THROUGHOUT THE STATE AND ORGANIZING THEM INTO A USEFUL PACKAGE OF INFORMATION FOR THE COMMITTEE'S CONSIDERATION.

AS AN EXAMPLE OF THE KIND OF WORK THAT THE WATER COMMISSION DOES, LET ME DRAW YOUR ATTENTION TO THE PRESIDENT'S REQUEST FOR OPERATION AND MAINTENANCE FUNDING FOR THE CENTRAL VALLEY PROJECT.

THE PRESIDENT REQUESTED $44.9 MILLION FOR CVP O & M. CALIFORNIA WATER EXPERTS JUDGED THIS AMOUNT OF MONEY TO BE BARELY ENOUGH -- IF THAT -- TO CONTINUE EXISTING OPERATIONS AND MAINENANCE AT A BARE-BONES LEVEL. NOTHING IS LEFT OVER FOR SOME OF THE FUNDAMENTAL O & M WORK THAT IS REQUIRED TO PRESERVE THE HUGE FEDERAL INVESTMENT THAT HAS BEEN MADE IN THE CENTRAL VALLEY PROJECT.

AFTER CAREFUL REVIEW OF CVP O & M NEEDS, THE WATER COMMISSION WAS REQUESTED TO SUPPORT A $12.6 MILLION ADD-ON TO THE PRESIDENT'S REQUEST OF $44.9 MILLION. INSTEAD OF RUBBER STAMPING THIS $12.6 MILLION RECOMMENDATION, THE WATER COMMISSION TOOK THE TIME TO DO THEIR OWN ANALYSIS, DETERMINE WHAT WAS TRULY NEEDED AND WHAT COULD BE PUT OFF UNTIL ANOTHER DAY, AND CAME UP WITH THEIR RECOMMENDATION THAT ONLY $8.6 MILLION IS NEEDED IN ADDITION TO THE PRESIDENT'S BUDGET REQUEST FOR CVP OPERATIONS AND MAINTENANCE.

THE WATER COMMISSION HAS SUBJECTED ALL FUNDING REQUESTS -- EVEN THE PRESIDENT'S REQUESTS -- TO THIS SAME KIND OF RIGOROUS ANALYSIS. THEIR FINAL RECOMMENDATIONS DESERVE THE COMMITTEE'S CAREFUL CONSIDERATION.

IN ADDITION TO THE WATER COMMISSION RECOMMENDATIONS, THERE ARE A NUMBER OF IMPORTANT CORPS FLOOD CONTROL AND HARBOR MAINTENANCE PROJECTS THAT NEED TO BE FUNDED. MOST OF THESE PROJECTS WILL BE ADDRESSED BY THE C-MANC TESTIMONY AND OTHERS THAT YOU WILL HEAR FROM TODAY.

TYPIFYING THE CORPS FUNDING NEEDS FOR CALIFORNIA IS THE $500,000 THAT IS NEEDED TO DO PRE-CONSTRUCTION ENGINEERING AND

DESIGN WORK FOR THE REDONDO BEACH/KING HARBOR BREAKWATER PROJECT.

THE NEED FOR THIS MONEY ARISES FROM THE DEVASTATING EFFECTS OF A COASTAL STORM LAST JANUARY THAT DID OVER $17 MILLION IN DAMAGES TO KING HARBOR ALONE. I HAPPENED TO BE IN CALIFORNIA AT THE TIME AND HAD AN OPPORTUNITY TO REVIEW THE WRECKAGE BY HELICOPTER JUST AFTER THE HARBOR WAS HIT BY THE STORM.

MOST BUSINESSES WITHIN THE HARBOR WERE DAMAGED, AND SOME OF THE LARGEST ONES WERE DESTROYED. SEVERAL HUNDRED BOATS IN KING HARBOR WERE DAMAGED AND COUNTLESS JOBS ARE NOW LOST AS A DIRECT CONSEQUENCE OF THE STORM.

EVEN THOUGH THE CORPS HAS REQUESTED ONLY $250,000 TO DO THE PRE-CONSTRUCTION WORK ON REPAIRING THE KING HARBOR BREAKWATER, I UNDERSTAND THAT $500,000 CAN BE SPENT IN FY 1989 THAT WILL ENABLE THE CORPS TO GO TO FULL CONSTRUCTION IN FISCAL YEAR 1990.

MR. CHAIRMAN, I MENTION THESE PARTICULAR REQUESTS ONLY AS AN ILLUSTRATION OF WHAT CALIFORNIA NEEDS ARE. THERE ARE MANY NEEDY PROJECTS THAT YOU WILL HEAR ABOUT TODAY.

GENERALLY SPEAKING, I WOULD LIKE TO REGISTER MY SUPPORT FOR THE PRESIDENT'S BUDGET. THE FOLLOWING LIST OF BUREAU OF RECLAMATION AND CORPS PROJECTS HAVE THE PRESIDENT'S ENDORSEMENT AND HAVE SPECIFICALLY BEEN BROUGHT TO MY ATTENTION:

CORPS OF ENGINEERS

PROJECT	PRESIDENT'S REQUEST
SURVEYS	
AMERICAN RIVER WATERSHED	600,000
IMPERIAL & SAN DIEGO STREAMS FLOWING INTO SALTON SEA	100,000
LOS ANGELES CO. DRAINAGE AREA	592,000
MARIN CO. SHORELINE-SAN RAFAEL CANAL	250,000
SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION	230,000
NO. CALIFORNIA STREAMS-SACRAMENTO METRO INTERIM	300,000
NORTH BAY INTERIM-NAPA, SOLANO	182,000
SAN MATEO-NORTH ALAMEDA INTERIM	40,000
SAN JOAQUIN RIVER BASIN-TULE RIVER	150,000
SAN JOAQUIN RIVER BASIN-KAWEAH RIVER	350,000
SAN JOAQUIN RIVER BASIN-CALAVERAS RIVER	450,000
SAN JOAQUIN RIVER BASIN-PINE FLAT DAM	250,000
SAN LORENZO RIVER-SANTA CRUZ	200,000
SANTA ANA RIVER & ORANGE CO. INTERIM III	336,000
FINAL REPORT	280,000
UPPER GUADALUPE RIVER-SANTA CLARA	480,000
WALNUT CREEK BASIN	150,000
PRECONSTRUCTION ENGINEERING AND DESIGN	
NO. CALIFORNIA STREAMS-DRY CREEK	400,000
CALIENTE CREEK	1,200,000
CACHE CREEK-OUTLET CHANNEL	250,000
COYOTE AND BERRYESSA CREEKS-SANTA CLARA	800,000
NAPA RIVER FLOOD CONTROL PROJECT	550,000
GUADALULPE RIVER	611,000
CONSTRUCTION - GENERAL	
CACHE CREEK-SETTLING BASIN	3,250,000
SANTA ANA RIVER MAIN STEM	15,000,000
CORTE MADERA CREEK	1,800,000
FAIRFIELD VICINITY STREAMS	2,400,000
LOWER SAN JOAQUIN RIVER AND TRIBUTARIES	1,500,000
MERCED CO. STREAMS	2,400,000
PAJARO RIVER-UVAS CARNADERO	2,470,000
REDBANK AND RANCHER	4,500,000
SACRAMENTO RIVER BANK PROTECTION	10,000,000
SAN LUIS REY RIVER	6,200,000
WALNUT CREEK	6,300,000
WILDCAT AND SAN PEDRO CREEKS	1,800,000

BUREAU OF RECLAMATION

PROJECT	PRESIDENT'S REQUEST
SACRAMENTO RIVER DIVISION	5,231,000
SAN LUIS UNIT	27,732,000
TRINITY RIVER RESTORATION	11,642,000

MISCELLANEOUS PROJECT FACILITIES

DELTA SUPPORT STUDIES	1,900,000
SUISUN MARSH PRESERVATION AGREEMENT	7,960,000
TEMPERATURE CONTROL DEVICE-SHASTA DAM	3,000,000

OTHER PROJECTS

ELSINORE MWD	10,625,000
RANCHO CA. WATER DISTRICT	5,450,000
COLORADO RIVER BASIN SALINITY CONTROL PROJECT-TITLE I	20,027,000

OTHER BuREC PROGRAMS

COLORADO RIVER FRONT	12,071,000

STUDIES

SAN JOAQUIN VALLEY CONVEYANCE	150,000

I WOULD HOPE THAT THE COMMITTEE WILL ACT FAVORABLY ON THESE REQUESTS.

AS IN YEARS PAST, I WILL NOT ADVOCATE ADDITIONS TO THE PRESIDENT'S BUDGET REQUEST UNLESS THE COMMITTEE DECIDES THAT ADDITIONAL MONEY IS AVAILABLE FOR ENERGY AND WATER APPROPRIATIONS. IN THAT EVENT, I URGE THE COMMITTEE TO ENSURE THAT CALIFORNIA RECEIVES ITS FAIR SHARE OF ANY APPROPRIATIONS MADE IN ADDITION TO THE PRESIDENT'S BUDGET REQUEST.

THE FOLLOWING REPRESENTS A LIST OF CORPS AND BUREAU OF RECLAMATION PROJECTS THAT HAVE BEEN DETERMINED BY THE AFFECTED PARTIES NOT TO HAVE BEEN ADEQUATELY FUNDED IN THE PRESIDENT'S BUDGET. I COMMEND THEM TO YOU FOR YOUR CONSIDERATION:

ARMY CORPS PROJECTS:

INSPECTION OF COMPLETED WORKS - SACRAMENTO RIVER FLOOD CONTROL PROJECT
NORTHERN CALIFORNIA STREAMS - YUBA RIVER WATERSHED
SAN JOAQUIN RIVER BASIN - SEDIMENTATION INVESTIGATION
SANTA BARBARA COUNTY STREAMS - LOWER MISSION CREEK
SAN FRANCISCO BAY SHORELINE - SANTA CLARA AND ALAMEDA INTERIM
DRY CREEK-WARM SPRINGS
GOLETA VICINITY STREAMS

GLENN-COLUSA IRRIGATION DISTRICT
NEW MELONES LAKE
SACRAMENTO RIVER FLOOD CONTROL PROJECT
POINT MUGU - SAN PEDRO BREAKWATER
RANCHO PALOS VERDES
COAST OF CALIFORNIA - STORM AND TIDAL WAVE STUDY
NEWPORT BAY HARBOR
NORTH COAST OF LOS ANGELES COUNTY
SAN LEANDRO BAY
SANTA CRUZ HARBOR
WEST NEWPORT BEACH HARBOR
SUNSET HARBOR
LOS ANGELES - LONG BEACH HARBORS
VENTURA MARINA
PORT SAN LUIS
CHANNEL ISLANDS HARBOR
CABRILLO BEACH

OPERATION AND MAINTENANCE:
CHANNEL ISLANDS HARBOR
CRESCENT CITY HARBOR
MARINA DEL REY
MORRO BAY HARBOR
NAPA RIVER
NOYO RIVER AND HARBOR
OCEANSIDE HARBOR
PETALUMA RIVER
SAN DIEGO HARBOR
SAN DIEGO RIVER AND MISSION BAY
SAN FRANCISCO BAY - DELTA MODEL STUDY
SAN LEANDRO MARINA
SAN FRANCISCO HARBOR AND BAY - DRIFT REMOVAL

<u>BuREC PROJECTS</u>

AUBURN-FOLSOM SOUTH UNIT
UNITED WATER CONSERVATION DISTRICT LOAN
SAN BERNARDINO VALLEY GROUND WATER PROJECT
SAN BERNADINO COUNTY (DAY CREEK) LOAN
SAN FELIPE DIVISION
CENTRAL VALLEY PROJECT OPERATION AND MAINTENANCE
OFF STREAM STORAGE STUDY
COLORADO RIVER SALINITY CONTROL PROJECT

ONCE AGAIN, I THANK THE SUBCOMMITTEE FOR ITS WILLINGNESS TO HEAR THESE APPROPRIATION REQUESTS. CALIFORNIA HAS DONE WELL BY THIS SUBCOMMITTEE IN THE PAST, AND I SINCERELY HOPE THAT WE CAN CONTINUE OUR CONSTRUCTIVE WORKING RELATIONSHIP. I LOOK FORWARD TO WORKING WITH THE COMMITTEE AS WE CONTINUE TO CONSIDER THE FISCAL YEAR 1989 ENERGY AND WATER APPROPRIATIONS BILL.

LOS ANGELES AND LONG BEACH HARBORS, CALIF.

STATEMENT OF HON. GLENN M. ANDERSON, U.S. REPRESENTATIVE FROM CALIFORNIA

Senator COCHRAN. I am glad to be able to welcome Glenn Anderson, my old friend from the House. He and I served for 6 years together on the House Public Works and Transportation Committee.

It is good to see you over here on this side of the hill today, Congressman. You may proceed.

Mr. ANDERSON. Thank you, Mr. Chairman and members of the subcommittee. It is a pleasure to appear before you today and to discuss a number of port and water projects that have great economic and environmental importance to my district and surrounding areas.

I am very honored to have been able to be here with two of my good friends, both my Senators, Pete and Alan. I am a little bit worried following them because, you know, I am not going to be able to do as good as they did. It is great.

Incidentally, Thad, in my testimony, it might skip by you, but one of the bigger portions I am asking for goes to Vicksburg, Miss.

Senator COCHRAN. I am all for it. [Laughter.]

Mr. ANDERSON. I want you to know that.

Senator WILSON. He may do better than the two Senators.

Senator COCHRAN. I knew there was a great deal of merit in this request. [Laughter.]

Mr. ANDERSON. I believe that the members of this committee know how important the port and water projects are to our country's economic well being, particularly those port and water projects in southern California, the focus of a huge percentage of the west coast foreign trade. I do respectfully ask the members of the subcommittee to provide the necessary funding for the following projects.

I have about six projects that I want to touch on. The first is the 2020 Plan, the Los Angeles-Long Beach Harbor 2020 master plan feasibility study. I believe it is essential that the subcommittee approve the administration's $45,000 1989 request for the Corps of Engineers' feasibility study, which is the first step in the congressionally authorized long-range master port plan.

The feasibility study which is strongly endorsed by the cities and ports of both Los Angeles and Long Beach would determine need for new channels, channel improvements, and deeper channels to accommodate increased shipping. As you may know, the 2020 Master Plan and its accompanying feasibility study is a response to the gigantic growth in Pacific rim trade much of which passes in and out of the Los Angeles-Long Beach ports.

These ports are not only considered the busiest ports in the nation—I say the world—but they also provide the U.S. Treasury with billions of dollars in customs duties, taxes, and fees. I believe that continuing the feasibility study is indispensable for the long-term viability of our country's two busiest ports.

A second project is the same Los Angeles-Long Beach Harbor hydraulic model. It is imperative that the committee recognize the unusual situation which has occurred regarding continued funding of the Los Angeles-Long Beach Harbor hydraulic model in Vicksburg, Miss. The purpose of this model and the resulting study of the model is to examine the impact of ship motion and tidal circulation upon the Ports of Los Angeles and Long Beach.

It is important that changes in the tidal circulation and the harbor channel flushing are examined to determine what the effect channel deepening and landfill expansion will have on the water quality in the two ports as well as in the local vicinity.

The important Vicksburg, Miss., model study is currently being upgraded by the Corps of Engineers from funds appropriated in fiscal year 1987. This upgrade is essential in order to provide data which will reflect the accurate and modern physical and numerical modeling techniques, thereby enhancing the accuracy and reliability of resulting data. Without this information, the entire port expansion project may be held up for lack of accurate and vital information.

Unfortunately, due to an oversight, sufficient funds were not included in the Corps' budget request and the project is in jeopardy. The Corps and the ports have since realized the oversight and agree that a funding level of $895,000 for fiscal year 1989 is necessary to continue the project. Therefore, I ask that the subcommittee approve the new funding request of $895,000 for the Los Angeles-Long Beach Harbor model study.

Los Angeles River Maintenance Dredging

The third project is the Los Angeles River dredging project. I ask the subcommittee to appropriate $1.5 million for remedial maintenance dredging to remove accumulated silt on an annual basis from the Los Angeles River.

This accumulated silt creates serious restrictions on and dangers to commercial and recreational boating activities in the Long Beach Harbor District. This dredged material could easily be used for filling scoured edges of the river channel, replacing sand on the beaches in Long Beach and down the coast from Los Angeles, or creating new landfills in adjacent areas.

I strongly believe that an appropriation of $1.5 million for the Los Angeles River dredging project would go a long way toward increased navigational passage for both commercial and recreational boats through the mouth of the Los Angeles River.

ECONOMIC RETURN ON FEDERAL INVESTMENT

Mr. Chairman, as you can see, for fiscal year 1989 I am asking for a total of $2,444,000—I add it up to $2,600,000, but that is about the same—to fund these three San Pedro Bay projects. During the same period, however, it is expected that the Ports of Los Angeles and Long Beach will generate approximately $2.5 billion in customs revenue, clear cash, for the U.S. Treasury.

And, if planned harbor improvement projects are allowed to proceed, the Ports of Los Angeles and Long Beach will generate over $6 billion a year in customs revenue by the year 2020. Needless to say, by any standard these projects are a great federal investment. I contend they are one of the greatest federal investments we have ever made.

Just to go back, a few years ago, not too long ago, our two ports were sleepy little ports, not making any money and, as a matter of fact, they were all real problems. A job has been done in our area. Today, we are the most successful, biggest port complex in the nation, besides, I think, in the whole world, but I know in the nation. We passed the No. 1 2 years ago by bringing in $2.6 billion cash into the Treasury.

This year they tell me it will be over $2.75 billion, in the 1990's it will go to $4 billion a year, in the 2000's it will go to $6 billion a year and, when the 2020 Plan is actually finished, it will be bringing in $6.2 billion a year. This is pretty big money when you multiply $6 billion by 20 years, you have $120 billion of good clean cash. [Laughter.]

This is good money.

Redondo Beach, King Harbor Breakwater, California

In addition to those ports, I have a couple of others that I want to mention. One that Alan mentioned here was King Harbor. I ask the subcommittee to support the administration's request of $250,000 and an additional $250,000 to continue the preconstruction engineering and design phase of the Redondo Beach, King Harbor project.

I happen to have a unique connection with that in that I was in the state legislature when the area really had its first big problem. I got the first money from Sacramento to put the first breakwater in the Redondo Beach area. Congressman King, who was in the Congress at that time, followed and got additional money and that is why we have King Harbor and the whole development down there today. I have been working on this particular project for roughly 40 years.

A recent storm, as Pete mentioned, in January 1988, destroyed much of the breakwater and the commercial businesses in the harbor. This vital project cannot be delayed because even minor storms threaten public safety and it threatens the $6.8 million in annual commercial activity in the harbor.

Oceanside Harbor, Calif.

Another project is a little south of me, but it is still my area. It is the Oceanside Harbor breakwater project. The Corps of Engineers is concluding a study of the Oceanside Harbor breakwater to determine solutions to the damaging surges caused by the inadequate breakwater.

The deficiencies of the breakwater and the jetties have resulted in 142 boating accidents, 56 serious injuries, 10 deaths, and over $4 million in property damage over the past few years. The obvious need to protect against further injuries, deaths, and property damage warrants the appropriation of only $450,000 to complete the preconstruction and design work on this vital project.

VENTURA HARBOR, CALIF.

The last project I will mention is the Ventura Port District. In addition, I support the Army Corps of Engineers' fiscal year 1989 civil works budget request of $1.5 million for the maintenance dredging of the Ventura Harbor entrance channel.

I also recommend an appropriation of $300,000 to initiate the engineering and design phase of a project to modify the harbor entrance in order to limit the annual operations and maintenance cost burden experienced by both the harbor and the federal government.

In closing, I wish to emphasize again how important I think it is to give the projects I have discussed the necessary funding levels that I have indicated here today. These port and water projects are not parochial or pork barrel in nature. On the contrary, they are projects that affect many lives and much of the economy of this country.

For this reason, I ask for the subcommittee to provide the necessary appropriations for the port and the water projects that I have outlined in my testimony.

I would like to thank you, Mr. Chairman, and I have just a sort of a little summary that I will show you.

The six projects that I mentioned add up to roughly $4,959,000. Right below it I wrote the $2.6 billion that we are going to be putting in your Treasury or over that this year and, as I mentioned, $4 billion in the 1990's, $6 billion in the 2000's.

But, even if we just use this year's figure, if you give me what I am asking for, for each dollar you give me, I am going to be giving you $520 dollars. $520 to $1 is a pretty good proportion and that is what we are doing from two ports that were kind of sleepy a few years ago, and now, as I said, they are the greatest port complex in the country, if not in the world.

Senator COCHRAN. Mr. Chairman, he has given us very impressive testimony and was very eloquent.

Mr. ANDERSON. Thank you, Thad.

Senator COCHRAN. I thank you for coming and taking the time to do that.

We have a vote on the floor of the Senate on the final passage of the budget resolution for this next year, so I am going to go over.

We will recess the hearing until either I can get back or another Senator can get back to resume chairing the committee. The subcommittee will stand in recess.

Thank you very much for your indulgence.

[The statement follows:]

STATEMENT OF CONGRESSMAN GLENN M. ANDERSON

Mr. Chairman and Members of the Subcommittee, it is a pleasure to appear before you today to discuss a number of port and water-related development projects that are of great economic and environmental importance to my district and surrounding areas. As members of this subcommittee, you know how important such projects are to this country's economic well-being, particularly since west coast port and water projects play such a major role in America's leadership in Pacific Rim trade. I respectfully ask the members of this subcommittee to provide the necessary funding for the following projects:

THE 2020 PLAN

1) It is important that the subcommittee approve the Administration's $49,000 FY 1989 request for the Corps of Engineers' Los Angeles and Long Beach Harbor 2020 Master Plan "Feasibility Study," which is the first step in the Congressionally authorized long-range master port plan. The feasibility study, which is strongly endorsed by the cities and ports of both Los Angeles and Long Beach, will determine the need for new channels, channel improvements, and deeper channels to accomodate increased shipping. As you may know, the 2020 Master Plan and its accompanying feasibility study is a response to the tremendous growth in Pacific Rim trade, much of which passes in and out of the Los Angeles and Long Beach Ports. These ports are not only considered the busiest ports in the nation, but they also provide the U.S. Treasury with billions of dollars in customs duties, taxes, and fees. I believe that continuing the feasibility study is indispensable for the long-term viability of our country's busiest port complex.

LOS ANGELES - LONG BEACH HARBOR HYDRAULIC MODEL

2) It is important the subcommittee recognize the unusual situation which has occurred regarding continued funding for the Los Angeles - Long Beach Harbor Hydraulic Model. The purpose of this model and the resulting study of the model is to examine the impact of ship motion and tidal circulation upon the Ports of Los Angeles and Long Beach. It is important that changes in tidal ciruculation and harbor channel flushing are examined to determine what the effect channel deepening and landfill expansion will have on water quality in the two ports as well as in the local vicinity. The important Vicksburg model study is currently being upgraded by the Corps of Engineers from funds appropriated for FY 1988. This upgrade is essential in order to provide data which will reflect accurate and modern physical and numerical modeling techniques, thereby enhancing the accuracy and reliability of resulting data. Without this information, the entire port expansion project may be held up for lack of accurate and vital information. Unfortunately, due to an oversight, sufficient funds were not included in the Corps' budget request, and the project is in jeopardy. The Corps and the ports have sinced realized the oversight and agree that a funding level of $895,000 for FY 1989 is necessary to continue the project. Therefore, I ask that the subcommittee approve the new funding request of $895,000 for the Los Angeles - Long Beach Harbor Model study.

LOS ANGELES RIVER DREDGING

3) I ask the subcommittee to appropriate $1,500,000 for remedial maintanence dredging to remove accumulated silt on an annual basis

from the Los Angeles River. This accumulated silt creates serious restrictions on and dangers to commercial and recreational boating activities in the Long Beach Harbor District. This dredged material could easily be used for filling scoured edges of the river channel, replacing sand on the beaches in Long Beach down the coast from the Los Angeles River, or creating new landfills in adjacent areas. The Los Angeles River Dredging Project will go a long way toward increased navigational passage for both commercial and recreational boats through the mouth of the Los Angeles River.

PORTS GENERATE BILLIONS IN CUSTOMS RECEIPTS

Mr. Chairman, as you can see, for FY 1989, I am asking for a total of $2,444,000 to fund three San Pedro Bay projects. During this same period, however, it is expected that the Ports of Los Angeles and Long Beach will generate approximately $2.5 Billion in customs revenue for the Treasury. And, if planned harbor improvement projects are allowed to proceed, the Ports of Los Angeles and Long Beach will generate over $6 billion a year in customs revenue by the year 2020. Needless-to-say, by any standard, these projects are a great federal investment.

KING HARBOR

4) I ask the subcommittee to support the administration's $250,000 request and an additional $250,000 to continue the preconstruction engineering and design phase of the Redondo Beach - King Harbor project. Currently, the breakwaters at the Harbor are insufficient to handle the tremendous power of Pacific storms. The recent January storm destroyed much of the breakwater and commercial businesses in the Harbor. This vital project cannot be delayed because even minor storms threaten public safety and the $6.8 million in annual commercial activity in the Harbor.

OCEANSIDE HARBOR

5) The Corps of Engineers is concluding a study of the Oceanside Harbor Breakwater to determine solutions to the damaging surges caused by the inadequate breakwater. The deficiencies of the breakwater and jetties have resulted in 142 boating accidents, 56 serious injuries, 10 deaths, and over $4 million in property damage over the past 13 years. The obvious need to protect against further injuries, deaths, and property damage warrants the appropriation of $450,000 to complete preconstruction and design work on this vital project.

VENTURA PORT DISTRICT

6) In addition, I support the Army Corps of Engineers FY 1989 civil works budget request of $1,515,000 for the maintenance dredging of the Ventura Harbor entrace channel. I also recommend an appropriation of $300,000 to initiate the engineering and design phase of a project to modify the Harbor entrance in order to limit the annual operations and maintenance cost burden experienced by both the Harbor and the federal government.

In closing, I wish to emphasize again how important I think it is to give the projects I have discussed the necessary funding levels that I have indicated here today. These port and water projects are not parochial or pork-barrel in nature. On the contrary, they are projects that affect many lives and much of the economy of this country. For this reason, I ask that the subcommittee provide the necessary appropriations for the projects I have outlined in my testimony. Again, thank you, for allowing me to testify today on what I consider to be a number of very important public works projects.

CALIFORNIA NAVIGATION PROJECTS

STATEMENT OF ROBERT LANGNER, PRESIDENT, CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

Senator COCHRAN. The committee will resume its hearing.

We adjourned as the panel was taking its seats. We have Robert Langner, president of the California Marine Affairs and Navigation Conference here.

We welcome you and ask you to proceed in any manner you wish. We have your statements, of course, and the documentation that you have supplied to the committee. We appreciate that. You all do a great job.

We know you are the coordinator and you are going to be presenting other witnesses who will be appearing, we welcome you and ask you to proceed.

Mr. LANGNER. We will do so expeditiously, Mr. Chairman. Thank you very much.

I want you to note, sir, that this is our 30th annual appearance before you, and I take it as a compliment that I am invited back, we are invited back, and we will try to justify your confidence that we will be very quick in our testimony.

We have a chart which lists our full request by project for the record presented. We would ask that you give that careful consideration. We are asking for $34.5 million in addition to the President's budget submission covering 65 California projects of which a major part, $28 million, would be for operation and maintenance projects.

We understand the constraints placed upon the Congress, but we ask your consideration of, as Senator Wilson did, should there be funds available, California's dynamics—so eloquently voiced by Congressman Anderson in his numbers, which I wish I could duplicate in his rapidity and exuberance—and California and the west coast in general.

The century of the Pacific is indeed here. We have surpassed, some 6 or 7 years ago, the North Atlantic in trade. As Chairman Anderson noted, the Los Angeles-Long Beach area has the largest customs district in the United States. I will note as a ship watcher that it has the greatest volume of ship traffic of any port area in the United States.

San Francisco in northern California has the fourth highest customs receipts in the United States and we are a very dynamic area, as you know, in recreational boating and in commercial commerce and in the fisheries.

We also note, in our prepared testimony, problems we have had and pioneering we have done in regulatory reform, both in conservation, recognition, mitigation, and minimization of any environmental impacts of dredging and navigation works, and the problems we have had with the regulatory process itself.

We presented to the Congress in 1972 a white paper on the subject of regulatory reform. And, we have looked hopefully, not always fruitfully, to such reforms. We hope that they will continue to be pursued by the Congress and by the Administration.

[The statement follows:]

STATEMENT OF ROBERT H. LANGNER, PRESIDENT, CALIFORNIA MARINE AFFAIRS AND NAVIGATION CONFERENCE

For the past 29 years, it has been my good fortune to appear before this Committee to present funding recommendations on behalf of California navigation and other projects. In each instance, an extensive prepared statement was submitted and summarized by this witness.

We come before you today in again endorsing and fully supporting the President's budget proposals for the fiscal year beginning October 1, 1988. The accompanying schedule appended contains our recommendations which include proposals for an additional $34.5 million covering 65 California projects, of which $27.9 million would provide additional funds for operations and maintenance of existing projects.

You will also note on the schedule specific requested increases in our recommendations -- which were arrived at only after careful study and approval by our full membership -- regarding certain studies (new and potential), preconstruction engineering and design, continuing construction and small continuing authorities. With us today are project sponsors, with statements and/or who wish to present brief testimony on these requests.

In preparing to appear today for the 30th consecutive year, my previous testimony spanning almost three decades was reviewed. Result is that almost for the first time in my life, a loss of words is suffered. There appears little that can be added to the analyses, reports, data, comments and observations, and general recommendations which have been previously presented to you and your predecessors.

What can be said, however, is that "what was, is more now". The shift in our nation's waterborne commerce and world trade ever westward continues unabated, as does corresponding growth on the Pacific Coast, and particularly, of California. The "Century of the Pacific" has indeed arrived -- long since. Its waterborne commerce exceeded the Atlantic more than half a dozen years ago. Vessel traffic at Los Angeles-Long Beach continues to exceed and pull away from that of the nation's former leading port, New York. The first and fourth busiest Customs Districts are in Southern and Northern California. And the Golden State would almost seem to have invented recreational boating, such is its leading role and the popularity of water-related recreation here.

The Pacific Coast -- again led by California -- came to the forefront in World War II as the leading shipbuilding sector, dominant in aviation and now, continuing in aerospace and other defense production leadership. Indeed, in logistics and operations, the nation's defense system has major dependence on what happens along and near our coastline.

It is therefore with regret that another trend continues "more than ever" -- for California is also the cutting edge of environmental concerns and organized action and reaction. We are proud of our national and state parks of the extensive portions of the Golden State set aside for this and future generations' enjoyment in natural settings, and of the leadership that we have provided for a century-plus in conservation programs.

But our state was also developed largely by navigational access. With the Federal Government and its historic mandates and responsibilities functioning in a very productive symbiosis with our resources and project sponsors, western states, the Pacific Coast in particular, and certainly California specifically -- have prospered and been able to respond to national needs because of this partnership.

But the excesses of concerns with and reactions to proposed maintenance of many current projects, and even more so, to their needed growth and improvements, no longer are evaluated in our opinion in a balanced and always rational manner. There are no longer ombudsmen for commerce and shipping. Navigation has seemingly become the "orphan of the storm" -- abandoned to the waves of other concerns, in the currents of public priorities, oblivious to national interests, which are more vital than ever.

C-MANC organized the first regional Dredging Committee more than a dozen years ago, to cooperate with state and Federal regulatory agencies in the application of criteria and requirements to this key element of maintaining and improving navigation. Our ports and other interested parties have cooperated fully and been always responsive to proposals and requirements

which constructively enhanced environmental values and minimized negative impacts which might be encountered in the dredging process. This body also presented the first "white paper" on the subject -- "A Muddle Over Mud" -- to the Congressional Port and Navigation Caucus of the House, in 1978.

These and other efforts have done little to stem the excesses of regulatory burdens, cost-escalations and extensive and growing delays in permit processing. Missions and authority granted under new and expanded laws have endowed agencies with powers and zeal not offset by considerations of all elements of the public interest and well-being; national security would be but one example of such omissions.

It is realized that this Committee is not necessarily the most appropriate forum for these observations. They are however presented almost out of habit here today -- for this is one setting and annual opportunity with which we feel very familiar, and know that there will be consideration and understanding of these views. We have no specific recommendations to alleviate these growing problems which we think often mitigate against long-held national values and perceived needs. We will continue in our efforts, meeting with agencies and officials and contending with private organizations and groups, although there sometimes is a sense of despair when we play out these roles.

Thank you for your patience on this "30th birthday" of our first testimony before your Committee. We are confident that the courtesy and cooperation which you have always afforded us will be continued, and that you will see many of these witnesses and project sponsors before you today, in the years ahead. Thank you.

# # #

Attached: Funding Recommendations

C-MANC supports fully the President's Budget, and further, recommends additional funding of a limited number of projects.

(Amounts in Thousands)

Project	Total Cost C of E	Balance After FY 1987	FY 1988 Conference Amount	FY 1989 Work Allowance	FY 89 C-MANC Recommendations President's Budget	FY 89 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
POTENTIAL NEW SHORELINE PROTECTION STUDIES							
Point Mugu to San Pedro Breakwater	440 1/	316	0	0	0	316	Complete Recon Study
SHORELINE PROTECTION STUDIES IN PROGRESS							
Rancho Palos Verdes	740	740	250	250	0	250	Initiate Feasibility Study
Santa Barbara County	940 2/	510	0	0	200	n/c	Initiate Feasibility Study
SPECIAL STUDIES							
Coast of California, Storm & Tidal Waves	7,820	2,623	1,100	1,100	1,000	1,500	Expand study to permit examination of entire coast of California
POTENTIAL NEW NAVIGATION STUDIES							
Humboldt Harbor & Bay (Deepening)	350	350	0	0	350	n/c	Complete Recon Report
Newport Bay Harbor	260	260	250	0	0	260	Prepare Report Required by WRDA of 1986
North Coast of Los Angeles County	510 3/	345	0	0	0	345	Complete Recon Report
San Leandro Bay	425 4/	375	0	0	0	375	Complete Recon Report
Santa Cruz Harbor	320	320	0	0	0	320	Complete Recon Report
West Newport Beach Harbor	270	270	0	0	0	270	Complete Recon Report

1/ Includes $124 incurred prior to 30 June 1974.

2/ Includes $ 91 incurred prior to 30 June 1974.

3/ Includes $165 incurred prior to 30 September 1977.

4/ Includes $50 incurred prior to 30 September 1978.

(Amounts in Thousands)

Project	Total Cost C of E	Balance After FY 1987	FY 1988 Conference Allowance	FY 1988 Work Allowance	FY 1989 President's Budget	FY 89 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
NAVIGATION STUDIES IN PROGRESS							
Los Angeles-Long Beach Harbors	7,820	649	600	600	49	n/c	Complete Feasibility Study
Marin County Shoreline San Rafael Canal	700	440	100	190	250	n/c	Complete Feasibility Study
Morro Bay Harbor	854 5/	420	100	100	220	n/c	Continue Feasibility Study
San Francisco Bay Shoreline	4,300	868	600	600	222	n/c	Continue Feasibility Study
Int #1 (S. Alameda & Santa Clara)	(2,045)	(120)	(120)	(120)	(0)	n/c	Funded for completion
Int #2 (San Mateo & N. Alameda)	(1,360)	(304)	(264)	(264)	(40)	n/c	Budgeted for completion
Int #3 (North Bay)	(895)	(444)	(216)	(216)	(182)	n/c	Continue Interim Feasibility Study
Santa Barbara Harbor (Restudy)	550	330	100	100	130	n/c	Continue Restudy
Santa Monica Breakwater	400	400	200	160	100	n/c	Initiate Feasibility Study
Sunset Harbor	2,950	1,795	900	900	0	600	Continue Feasibility Study

5/ Includes $154.00 incurred prior to 30 September 1978.

POTENTIAL NEW PRECONSTRUCTION ENGINEERING AND DESIGN							
Los Angeles-Long Beach Harbors	310,000 (1,960)	(1,960)	(0)	(0)	(0)	(250)	Initiate Design
San Francisco Bay Shoreline Southern Alameda - Santa Clara Counties	20,000 (500)	(500)	(0)	(0)	(0)	(250)	Initiate Design
Ventura Marina	4,800 (450)	(450)	(0)	(0)	(0)	(300)	Initiate Design

(Amounts in Thousands)

Project		Total Cost C of E	Balance After FY 1987	FY 1988 Conference Allowance	FY 1988 Work Allowance	FY 89 C-MANC Recommendations President's Budget	FY 89 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
CONTINUING PRECONSTRUCTION ENGINEERING AND DESIGN								
Noyo River and Harbor (Breakwater)		6,700 (1,560)	(787)	(450)	(450)	(200)	n/c	Continue Design
Noyo River and Harbor (Channel Extension)		1,980 (580	(130)	(130)	(130)	(0)	n/c	Funded for Completion
Oceanside Harbor		3,000 (350)	(350)	(350)	(110)	(240)	n/c	Complete Design
Redondo Beach		5,800 (600)	(600)	(100)	(100)	(250)	n/c	Continue Design
CONTINUING CONSTRUCTION PROJECTS								
Oakland Harbors	(N)	21,600	20,136	7,700	5,700	10,000	n/c	Continue Construction
Port San Luis	(N)	12,100	11,210	0	0	0	500	Complete Design
Richmond Harbor	(N)	8,000	6,571	700	500	430	n/c	Continue Construction
Sacramento River Deep Water Ship Channel	(N)	41,200	39,947	3,000	1,500	5,300	n/c	Continue Construction
San Francisco Bay to Stockton (John F. Baldwin & Stockton Ship Channels)	(N)	132,000	81,407	2,700	2,700	1,700	n/c	Continue Construction
Imperial Beach	(BE)	3,340	0	0	0	0	n/c	No requirement pending resolution of litigation
Surfside-Sunset & Newport Beach	(BE)	30,200	20,478	0	0	1,300	n/c	Periodic Beach Nourishment
SMALL CONTINUING AUTHORITIES								
Channel Islands Harbor	(N)	250	250	0	0	0	250	Complete Definite Project Report (200) and Initiate Plans and Specifications (50)
Cabrillo Beach	(BE)	1,200	1,200	0	0	0	1,200	Complete Definite Project Report, Plans and Specifications, and Construction of Section 103 project.

(Amounts in Thousands)

Project	FY 87 Obligations	FY 1988 Estimated Obligations	FY 1989 FY 89 C-MANC Recommendations President's Budget	FY 1989 FY 89 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
OPERATIONS AND MAINTENANCE PROJECTS					
Bodega Bay Harbor	0	0	0	n/c	No maintenance required
Channel Islands Harbor	3,187	91	0	3,500	Periodic dredging and North Breakwater Repair
Crescent City Harbor	828	1,355	820	1,300	Periodic dredging and Monitor Breakwater Repairs
Dana Point Harbor	0	0	0	n/c	No maintenance required
Halfmoon Bay Harbor (Pillar Point Harbor)	0	0	0	n/c	No maintenance required
Humboldt Harbor and Bay	2,382	2,466	4,000	n/c	Dredging and Breakwater Repairs
Los Angeles - Long Beach Harbors	59	252	0	1,500	Dredge Mouth of Los Angeles River
Los Angeles - Long Beach Harbors Model	1,497	1,449	150	895	Continue Model Upgrade
Marina Del Rey	952	138	0	1,500	Periodic Dredging
Morro Bay Harbor	2,372	35	15	2,400	Periodic Dredging
Moss Landing Harbor	456	41	0	n/c	No maintenance required
Napa River	0	216	0	1,700	Periodic Dredging
Newport Bay Harbor	0	0	0	n/c	No maintenance required
Noyo River and Harbor	381	415	0	1,000	Dredging and Jetty Repair
Oakland Harbor	2,610	1,638	1,682	n/c	Dredging
Oceanside Harbor	0	76	0	1,000	Dredging
Oceanside Experimental Sand By-Pass System	2,416	2,458	4,170	n/c	Operation of Bypassing Plant; construct phase two of Bypass System
Petaluma River	737	871	0	1,500	Periodic dredging
Port Hueneme	0	0	0	n/c	No maintenance required
Port San Luis	100	0	0	400	Breakwater Repair
Redondo Beach Harbor (King Harbor)	143	0	0	2,000	Make permanent repairs to Breakwater
Redwood City Harbor	0	0	2,090	n/c	Dredging
Richmond Harbor	1,815	1,412	2,050	n/c	Dredging
Sacramento River					
Sacramento River (30 ft.)	3,803	305	2,060	n/c	Dredging and Bank Stablization
Sacramento River (Shallow Draft)	125	80	80	n/c	Maintain lock

(Amounts in Thousands)

Project	FY 87 Obligations	FY 1988 Estimated Obligations	FY 1989 FY 89 C-MANC Recommendations President's Budget	FY 1989 FY 89 C-MANC Recommendations Additional Total Recommendations (When Greater than Budget)	Purpose of Funding
OPERATIONS AND MAINTENANCE PROJECTS					
San Diego Harbor	1,224	329	0	3,500	Restore critical project depths
San Diego River & Mission Bay	332	0	0	1,000	Repair 1988 storm damages
San Francisco Bay-Delta Model Structure	1,007	1,021	1,086	1,700	Annual maintenance, rehabilitate Vistor Center Displays, and upgrade model capability
San Francisco Harbor	1,560	3,911	1,865	n/c	Dredging
San Joaquin River	768	25	1,014	n/c	Dredging
San Leandro Marina (Jack D. Maltester Channel)	0	0	0	1,000	Periodic Dredging
San Pablo Bay and Mare Island Strait	1,889	1,372	3,095	n/c	Dredging
San Rafael Creek	596	191	0	n/c	No maintenance required
Santa Barbara Harbor	785	907	755	n/c	Dredging
Santa Cruz Harbor	59	163	0	n/c	No maintenance required
Suisun Bay Channel	171	351	945	n/c	Dredging
Suisun Channel	0	0	0	n/c	No maintenance required
Ventura Harbor	1,657	1,598	1,515	n/c	Dredging
Drift Removal (S.F. Harbor and Bay)	1,323	1,592	1,460	2,000	Repair Debris Dock
		#	#	#	

STATEMENT OF PAUL HUGHEY, CHAIRMAN, BOARD OF DIRECTORS, C-MANC

Mr. LANGNER. We have a number of witnesses here. I would like to start by very briefly introducing our chairman of the board of directors, Mr. Paul F. Hughey.

Mr. HUGHEY. Mr. Chairman, I simply want to express the appreciation of all of the members of the C-MANC, both public officials and representatives of private industry that represent the maritime industry of California, for the thoughtfulness that this committee has always given to our requests for appropriations. We think we represent true national interests.

Congressman Anderson certainly expressed it very well when he talked about the amount of money that comes into the U.S. Treasury from custom receipts in return for a relatively small investment.

We thank you very much for your consideration.

[The statement follows:]

STATEMENT OF PAUL F. HUGHEY, EXECUTIVE DIRECTOR, COALITION OF LABOR AND BUSINESS FOR ALAMEDA, CONTRA COSTA, AND SOLANO COUNTIES, CALIF.

SUMMARY

Requested Amount

Fiscal Year

1989

Project	President's Budget	Purpose of Funding
San Francisco Bay to Stockton Ship Channel (John F. Baldwin and Stockton Ship Channels)	$1,700,000	Continue hydrological studies of hydraulic salinity barrier for Baldwin Channel on Bay and Delta Model and continue design of Phase 3.

TESTIMONY

My name is Paul F. Hughey. I am the Executive Director of the Coalition of Labor and Business for Alameda, Contra Costa and Solano Counties, California.

My organization would like to express our appreciation for the continued appropriations the Committee has provided to enable proper planning, design and construction for the San Francisco to Stockton Ship Channel improvement project. This very important improvement is vital to the long range economic viability of the large area it serves. We also greatly appreciate the manner in which the Corps of Engineers is carefully considering the environmental impact of this project within the guidelines provided by the Congress. We approve of the careful analysis of environmental, economic and social factors as they relate to this project and we will cooperate fully in providing any information or assistance the Corps may require to enable proper judgment in initiating further phases of construction.

Background

A brief was filed with the Corps of Engineers in 1958, requesting a study of the feasibility of improving the main shipping channel between San Francisco and the Port of Stockton. As a result, the study was funded by the Congress under an appropriation sponsored by the late Congressman John F. Baldwin. This project, described in House Document No. 208 of the 89th Congress, 1st Session, was authorized and approved by the Congress in September 1965. As a part of this project, the San Francisco Bar has been deepened from 50' to 55' and the main shipping channel into San Francisco Bay widened. Some minor additional construction was also provided near the Port of Richmond and on the levee system of the upper San Joaquin Rover.

In order to expedite work on portions of this overall project, the project was divided into five phases or sections. Commencing at the entrance to San Francisco Bay, Phase 1, the widening and deepening of the San Francisco Bar to 55' has been completed.

Phase 2 consisted of deepening the Southampton Shoals Channel from 35' to 45' for a distance of approximately three miles. This phase has been completed. It provides the vitally needed deeper channel to the Port of Richmond which has placed its first container berth in operation, and a better approach to the Chevron, USA, Richmond Refinery wharf. Construction was completed on this phase in Fiscal Year 87.

Phases 3 and 4, remaining to be completed, consist of deepening the existing 36' channel through San Pablo Bay to 45' and the lower Suisun Bay 35' Channel to 45'. These two channels are separated by the 8 mile long Carquinez Strait which is very deep and requires no dredging. Corps model studies indicate that Phase 3 will induce about a 5% increase in salinity levels up stream in the Delta. Therefore, the Corps is conducting engineering and model studies on various types of underwater salinity barriers or sills in the Carquinez Strait to mitigate the effects of this phase in order to maintain or improve water quality in the Delta.

Phase 5 consisted of deepening the Stockton Ship Channel and upper Suisun Bay Channel from 30' to 35' from Point Edith, upstream of Martinez, to the Port of Stockton. Construction commenced on this phase in October 1982, and was completed in Fiscal Year 87.

The Economy

The San Francisco Bay is known throughout the world as one of the world's great harbors. In 1984, the latest year for which Corps of Engineers figures are available, some 50 million tons of cargo passed through the Golden Gate. Almost two thirds of this total passed over the public and private docks of Contra Costa County and Solano County via the existing John F. Baldwin Ship Channel.

Five of the six petroleum refineries in Northern California, representing some 800,000 barrels per day of throughput, lie on this channel. Also on this channel is the world's largest sugar refinery, C&H at Crockett, importing almost 1 million tons of raw sugar each year; a major steel plant; chemical plants; paper mills; a gupsum plant; expanding general cargo facilities; and major electric power generating plants of the Pacific Gas and Electric Company which are partially dependent upon shipment of fuel oil at various times.

Also served by this channel are three important naval installations: the Naval Fuel Supply Depot at Point Molate, near Richmond; the U.S. Naval Shipyard (a Nuclear Submarine repair facility) at Mare Island, Vallejo; and the U.S. Naval Weapons Station at Concord, which is shifting to containerization and which will require a deeper channel. The importance of a safe and adequate shipping channel to our Navy is obvious. It might be noted that the Corps does not include national defense installations in computing the cost-benefit ratio of projects.

Mr. Chairman, given the present balance of payment problems, it would seem obvious that everything possible should be done to reduce transportation costs and improve efficiency, while minimizing environmental impacts.

In 1984, some 1,000 tankers entered San Francisco Bay. Over 220 of these vessels had a draft of 35' or more which is the present dock side depth of all of the petroleum refineries and terminals on the channel. These vessels have to anchor in South San Francisco Bay and have a portion of their cargo lightered off before they can proceed partially loaded to the refinery or terminal docks. This is an environmentally unsound practice, since it is known that the greatest risk of oil spillage occurs when it is necessary to transfer cargo. A deepening of the channel would enable these ships to proceed directly to their docks, thereby reducing time and transportation costs and reducing environmental hazard.

Conclusion

Mr. Chairman, the long-range viability of the San Francisco Bay Area regional economy is dependent upon the completion of this project. The last significant improvements to this main shipping channel were completed in the 1930's. The world shipping fleet has changed dramatically since that time. The ships are much larger in every respect and unless this channel is improved, the region cannot remain competitive, to the detriment of our nation. Given the importance of international trade, the balance of payments and the very large sums collected in customs receipts by the San Francisco District each year, true national interests are involved.

We request the Committee to appropriate the amount of $1,700,000 to enable this project to proceed expeditiously.

Mr. Chairman, we thank the Committee for its attention to our concerns. Thank you.

Senator COCHRAN. Thank you, Mr. Chairman.

Mr. HUGHEY. I might just add, my grandmother is from Mississippi, Senator, if that helps any. [Laughter.]

Senator COCHRAN. Yes; sure it does.

Mr. LANGNER. We have three of our ports not represented. They are all represented here today, but they had to leave physically. They have submitted statements for the record. Dan Allen from the Port of Long Beach, Charles Conners from the Port of Long Beach, Ed Gorman from the Port of Los Angeles, and Ed Clark, director of construction management for the Port of Los Angeles.

We hope that their statements would be entered into the record.

Senator COCHRAN. They will be included and we appreciate that.

[The statements follow:]

STATEMENT OF E.D. ALLEN, DIRECTOR OF ENGINEERING, PORT OF LONG BEACH, ON BEHALF OF THE LONG BEACH BOARD OF HARBOR COMMISSIONERS

I am E. D. Allen, Director of Engineering for the Port of Long Beach, California. I have been authorized by the Board of Harbor Commissioners of the City of Long Beach to represent the Port of Long Beach in regard to appropriations for the Los Angeles-Long Beach Harbors Study, the Los Angeles and Long Beach Harbors Model Study programs and for remedial maintenance dredging in the mouth of the Los Angeles River.

The Ports of Long Beach and Los Angeles, in cooperation with the Corps of Engineers, have developed a long-range master plan, referred to as the 2020 Plan, which demonstrates the need for new navigation channels and additional landfill development. This document is a product of the Los Angeles-Long Beach Harbors Study for future channels and landfill development, which has been in process since 1964 by the U. S. Army Corps of Engineers. The Water Resources Development Act of 1986 authorizes construction of this master plan project upon completion of a favorable Chief's Report. The first step in this process is a feasibility report, which is already in progress. The Ports and the Corps wish to continue this feasibility report, including physical and numerical model testing and other studies needed for the permitting process. It is,therefore, urged that the Committee approve an appropriation of $49,000 for fiscal year 1989 to continue this study.

The Water Resources Development Act of 1976, Section 123, authorized the Chief of Engineers to operate and maintain the Los Angeles-Long Beach Harbor Hydraulic Model at the U. S. Army Corps of Engineers Waterways Experiment Station in Vicksburg, Mississippi as part of the Los Angeles and Long Beach Harbors Model Study. In the President's budget for fiscal year 1988, $1,345,000 was included and the funds have been appropriated to upgrade that model, including accumulating data on tidal circulation, wave energy, and ship motion in the San Pedro Bay area. This model study is essential to satisfy regulatory agency requirements and to plan and engineer the expansion of the port complex and associated navigation channels, as detailed in the Port's 2020 Plan. The Corps of Engineers advises that this study must be consecutively funded for several more years if useful results are to be obtained. Therefore, Congress is respectfully requested to appropriate $1,300,000 for fiscal year 1989 to continue this modeling study.

The Port of Long Beach also concurs with and supports the recommendation of the California Marine Affairs and Navigation Conference and the Long Beach City Council on federal funding for remedial maintenance dredging to remove accumulated flood-deposited silt in the mouth of the Los Angeles River. These silt deposits create serious restrictions and safety hazards to commercial and recreational boating activity in and adjacent to the Long Beach Harbor District, which have resulted in accidents and litigation. In addition, the Port recommends that these silt deposits be removed, preferably on an annual basis, and at least on a biennial basis as a scheduled item of work. The dredged material should be used for replacement of the sand on the beaches in Long Beach, down coast from the Los Angeles River. The replenishment is necessary because of the interruption of the normal littoral processes by the flood control channel and the influence of the federal breakwater on normal wave action, which create a reduction in sand movement and serious beach erosion under certain storm conditions. It is estimated that the annual rate of siltation is approximately 200,000 to 300,000 cubic yards and is influenced by operational decisions at the Corp of

Engineers' Hansen Dam, located at the headwaters of the river. It is imperative, for our current operations, that a more assured long-range remedy be found for the Los Angeles River mouth if navigational utility is to be maintained. House Document 843, 76th Congress, 3rd Session, delegated this maintenance responsibility to the Corps, but subsequent commercial development in the mouth of the river have made the authorizations set forth in this document insufficient. Therefore, it is recommended that the existing design elevation be lowered from -20 ft. MLLW to a depth of -30 ft. MLLW and that a scheduled program be established to monitor water depths in the river to ensure an operational depth of -20 ft. MLLW. These actions will allow the Corps to initiate maintenance activities in a more timely and economically feasible manner before the channel becomes completely closed to navigation.

The City believes that these modifications, as well as an explicit annual maintenance dredging and beach replenishment project, would provide such a long-range solution to the siltation problem from the Los Angeles River.

From the Army Corps of Engineers' most recent survey data, approximately 1.4 million cubic yards of material has shoaled the river area. An appropriation of $4,200,000 for construction and $150,000 for design costs would fund this most essential remedial project on a periodic basis. Congress is, therefore, respectfully requested to appropriate the initial phase of this work in the amount of $1,500,000.

Attached hereto is Resolution No. HD 1396, adopted by the Board of Harbor Commissioners of the City of Long Beach on March 21, 1988, and Resolution No. C-24496, adopted by the Long Beach City Council on March 29, 1988, both of which contain data relating to the background of the Los Angeles-Long Beach Harbors Study, hydraulic modeling, and other related matters, and which stress the need for federal assistance in developing economic, technical and environmental background information essential to the design and permitting of Port facilities vital to regional and national interests.

Agencies benefiting from these projects in San Pedro Bay include, but are not limited to, the City of Long Beach, the Ports of Long Beach and Los Angeles, the County of Los Angeles, the State of California, the United States Navy and Coast Guard, the United States Customs Service, and various state and federal environmental agencies.

Thank you for permitting me the privilege of this presentation.

RESOLUTION NO. C- 24496

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LONG BEACH URGING THE CONGRESS OF THE UNITED STATES TO AUTHORIZE AND FUND THE ANNUAL DREDGING OF THE MOUTH OF THE LOS ANGELES RIVER

WHEREAS, the mouth of the Los Angeles River, which is the largest of the numerous flood control channels in Los Angeles County, is located within the city limits of the City of Long Beach; and

WHEREAS, due to heavy rainfall runoff, great quantities of silt and sediment are deposited at the mouth of the Los Angeles River and in the channel seaward thereof in Queensway Bay; and

WHEREAS, the annual rate of such siltation is approximately 200,000 to 300,000 cubic yards, and is influenced by operational decisions at the Corps of Engineers Hansen Dam situated at the headwaters of the Los Angeles River; and

WHEREAS, the City-owned Catalina Landing Facility, from which a private company operates daily scheduled passenger service to and from Catalina Island under a permit from the City, and the Golden Shore Small Boat Launching Facility which is owned and operated by the City for the launching of small boats, are both located at the mouth of the Los Angeles River; and

WHEREAS, said silt deposits create substantial hazards and cause serious problems and significantly restrict, limit and hinder the use of the navigable waters at the mouth of the Los Angeles River for commercial and recreational boating activities, especially for commercial transportation between Long Beach and Catalina Island; and

WHEREAS, the shoaling about the piers of the Queensway Bridge created by the silt deposits may affect the structural integrity of said bridge; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River and the basins and channel seaward thereof in Queensway Bay is necessary so that said navigable water areas and the adjacent facilities may continue to be used safely and without danger of loss of life and property; and

WHEREAS, the maintenance dredging of the mouth of the Los Angeles River to insure continuation of safe navigation is within the jurisdiction of the United States Army, Corps of Engineers; and

WHEREAS, the accumulated silt deposits in the mouth of said river should be removed on an annual basis as a scheduled item of work for the Corps of Engineers; and

WHEREAS, due to funding limitations, such maintenance dredging has only been performed on an occasional basis by the Federal Government and navigational dredging responsibilities have thus been unnecessarily shifted to local government;

NOW, THEREFORE, the City Council of the City of Long Beach resolves as follows:

Section 1. The Congress of the United States is urged to appropriate approximately $4,350,000 for the United States Army, Corps of Engineers, to perform the necessary maintenance dredging at the mouth of the Los Angeles River and the basins and channel seaward thereof in Queensway Bay to remove deposits of silt and sediment which have accumulated at that location to lower the existing design elevation to a depth of minus thirty (30) feet mean low low water (MLLW).

Sec. 2. The Congress of the United States is requested to authorize and fund an annual maintenance dredging project for the mouth of the Los Angeles River by the Department of Army, Corps of Engineers in order to insure an operational depth of minus twenty (20) feet mean low low water (MLLW) and to provide a long range solution to this continuing situation and maintain navigational utility.

Sec. 3. The City Clerk is directed to send certified copies of this resolution to the United States Senators and the Members of the House of Representatives representing the Long Beach area; the Secretary of the Army; the Chief of Engineers of the Department of the Army; and to such other interested persons as may be deemed appropriate.

Sec. 4. The City Clerk shall certify to the passage of this resolution by the City Council of the City of Long Beach and it shall thereupon take effect.

I hereby certify that the foregoing resolution was adopted by the City Council of the City of Long Beach at its meeting of March 29, 1988, by the following vote:

Ayes: Councilmembers: Braude, Edgerton, Hall, Clark, Smith, Grabinski, Harwood, Kell.

Noes: Councilmembers: None.

Absent: Councilmembers: Tuttle.

Shelia Powell
City Clerk

STATEMENT OF THE HARBOR DEPARTMENT OF LOS ANGELES, CALIF.

My testimony today on behalf of the Port of Los Angeles details the continued significance of federal fiscal support for the "2020 Master Plan", a major navigational improvement and port development project in the San Pedro Bay which has been jointly undertaken by the Ports of Los Angeles and Long Beach and the U.S. Army Corps of Engineers, and proscribed by Section 210(b) of the omnibus Water Resources Development Act of 1986 (P.L. 99-662).

The success of the "2020 Plan" depends on two tangential studies. The Corps of Engineers is conducting the first study, referred to as the Vicksburg Model Study, which is a five-year tidal and harbor resonance study of the Los Angeles and Long Beach harbors at its Waterways Experiment Station in Vicksburg, Mississippi. The second study, also being conducted by the Corps of Engineers, is the feasibility study for the "2020 Master Plan" project. Both studies are directly related to the federally-sponsored reconnaisance study which resulted in the "2020 Master Plan".

The Corps of Engineers' FY89 budget proposal does not include operation and maintenance funds for the continuation of the Vicksburg Model Study. An appropriation of $895,000 in FY 89 is needed so that the ports' project can remain on the schedule provided in the three-party "Memorandum of Agreement" entered into on June 26, 1987 between the Ports of Los Angeles and Long Beach and the Corps of Engineers. This agreement includes the terms for conducting the feasibility study and the management plan for the Vicksburg Model Study.

We do, however, support the inclusion in the Corps of Engineers' FY 89 budget request of $49,000 for completion of the feasibility study. These funds will be used to complete environmental and internal reviews that are necessary to finish the study in preparation for the Chief's

Report. In addition, we are working with the Corps in an effort to complete the feasibility study on schedule. As such, we further request that $250,000 be included in the Corps of Engineers' FY 89 budget for initiation of the Planning, Engineering and Design phase of the "2020 Master Plan" project to ensure the continuity of the entire project.

The Vicksburg Model Study is a long-term harbor response, ship motion and tidal circulation study for the Ports of Los Angeles and Long Beach, designed to collect data for the evaluation of the ports' responses to the environmental changes that the "2020 Plan" project will have on the harbor, such as deeper channeling and land re-configurations as called for in the Corps' completed "2020 Master Plan". Changes in tidal circulation and harbor channel flushing must be examined to determine the possible effects that channel deepening and landfill expansion will have on water quality in both ports and the surrounding vicinity.

In conjunction with the Model Study, the physical model itself is in the process of being upgraded from funds appropriated in FY 87 and FY 88. The model upgrade is necessary to provide the data which will reflect state-of-the-art numerical and physical modeling techniques, and will produce the most accurate study data possible. Work on both the Model Study and the model upgrade are proceeding simultaneously.

As the major partner in the "2020 Master Plan" project, the Corps of Engineers was charged over one year ago---at the signing of the "Memorandum of Agreement"---with the responsibility of providing the basic data on harbor conditions upon the ports' submission of site-specific projects relative to the "2020 Master Plan". Without adequate funding of the Model Study necessary data on the San Pedro Bay, as required by the Corps of Engineers for its preparation of the

Environmental Impact Survey (EIS) for the "2020 Master Plan", will be incomplete. On-going capital development programs initiated by both ports are raising millions of dollars in local revenues to cover the local share of these projects.

Mr. Chairman, I would like to briefly illustrate the nexus between the Vicksburg Model Study and the feasibility study. Simply stated, no federal construction funds can be requested or expended until the Chief's Report is completed pursuant to Section 201 (b) of the 1986 Water Resources Development Act. The Chief's Report will be based on data derived from the completed Model Study which is absolutely essential to satisfy regulatory agency requirements and to plan and engineer the expansion of the two ports' complexes and associated navigation channels. A delay of one year or more in the continuation of the Model Study will similarly delay the Chief's Report, and accordingly, jeopardize the ability of both ports to meet the five year window for construction as required in the 1986 Water Resources Act.

In the spirit of partnership evident in the "Memorandum of Agreement", the ports strongly feel that the agreed upon programs for the feasibility study and the Model Study should remain on schedule. I therefore request, Mr. Chairman, that the Subcommittee appropriate $895,000 in the federal FY 89 budget as evidence of the government's continued willingness to cooperate with the ports in developing navigational projects. Such projects will greatly enhance transportation cost savings and provide dramatic increases in revenues to the federal government as new locally-funded port projects are developed in concert with the federal navigation projects.

The Ports of Los Angeles and Long Beach have long valued the vision of this Subcommittee in appropriating scarce federal resources to harbor

and navigation projects such as ours. We view this commitment to the expansion of water-borne transportation as a demonstration by the federal government of its support for the nation-wide economic development efforts that the Nation's port authorities have undertaken.

By the year 2020, we estimate that the federal government will realize more than $6.2 billion in U.S. Customs Service collections generated from the increased trade flowing through our ports, based on the economic activity derived from our ports' expansion. Indeed, this small investment now will yield tremendous profits for the federal coffers in the future. Thank you for the opportunity to share this valuable information with you today. The Ports of Los Angeles and Long Beach stand ready to work with you in an effort to assist you in helping us discharge our responsibilities to the future needs of water-borne transportation in this country.

JACK D. MULCHESTER FEDERAL CHANNEL, CALIF.

STATEMENT OF DAVID KARP, MAYOR, SAN LEANDRO

Mr. LANGNER. Mayor David Karp of the city of San Leandro.

Mayor KARP. Thank you very much.

Mr. Chairman, thank you very much for listening to our testimony today. Again, I would like to concur with the statements that were made before about Chairman Anderson's statement. Mr. Anderson did a wonderful job in stating the problems in the ports down south.

I will keep my testimony very, very brief, and that is that I am here on behalf of the C-MANC as well as the city of San Leandro, the U.S. Conference of Mayors of which I head the committee in the California League of Cities.

We have a small port which is called the Jack D. Mulchester federal channel, and then we have berthing facilities for approximately 600 boats. We feel very strongly that we should share in the expense of dredging this channel which has become a hazard now, or is becoming a hazardous now to navigation.

We feel that if the federal government is willing to go ahead with the dredging of that channel in the 1990 budget that we will go ahead and be a partner in this by going ahead and dredging our marina as well as replacing the berthing.

It has made a great many jobs, in the many hundreds, in our bay area and the marina, and it is really the shining star for our city and for the bay area.

We would appreciate that you would give us consideration in this coming budget. With that I shall conclude.

Senator COCHRAN. Thank you, Mayor Karp. We appreciate your testimony. We appreciate you being here.

PREPARED STATEMENT

Mr. LANGNER. Also submitting a statement for the record, Mr. Chairman, is dennis clark, port director of the Port of Sacramento.

[The statement follows:]

STATEMENT OF DENNIS CLARK, PORT DIRECTOR, PORT OF SACRAMENTO, CALIF.

Thank you, Mr. Chairman and members of the subcommittee, for this opportunity to present testimony on behalf of the Sacramento River deep water ship channel deepening project.

After 17 years of study, our project was authorized and funded through the passage of the Water Resources Development Act of 1986. We have entered into a local cooperation agreement with the Army, providing for cost sharing.

Since authorization, the Corps of Engineers and ourselves, as partners, have instituted changes in the project that have reduced its total cost from $79 million to $49 million. This is a savings of $30 million which all involved can point to with pride. Efforts are continuing and we have every expectation of further reducing the cost of this project.

Construction is scheduled to commence on the first phase in September. We respectfully urge that you support the amount of $5.3 million in the President's budget for fiscal year 1989, which will permit the construction to continue as planned throughout the coming fiscal year.

SAN FRANCISCO AND SACRAMENTO BAY AREAS NAVIGATION PROJECTS

STATEMENT OF FRANK BOERGER, CONSULTANT, GOLDEN GATE PORTS ASSOCIATION

Mr. LANGNER. We also have with us today Frank C. Boerger, consulting engineer, Golden Gate Ports Association, and the Port of Oakland. He is also chairman of our dredging committee.

Mr. BOERGER. Thank you very much. Mr. Chairman, it is a pleasure to be here today.

I have submitted two statements and would like to have them entered into the record. I would like just to make two brief points concerning them.

The Golden Gate Ports Association is a cooperative organization that comprises the six publicly-owned ports that are served through the Golden Gate. Although they are very competitive one with the other for cargoes, they have been cooperating on a number of programs to improve the marketability of shipping through the bay area.

Part of their program is to stand behind the channel deepening projects that have been proposed for three of our ports that are currently under consideration and are in need of funding. They have been included in the President's budget and we are asking no more than that which was in the President's budget.

A special statement for the Port of Oakland also has been included because they were not able to be here today. We thank you very much for the opportunity to present this testimony.

[The statements follow:]

STATEMENT OF THE GOLDEN GATE PORTS ASSOCIATION

The Golden Gate Ports Association (GGPA) is pleased again to present testimony to this committee regarding the Corps of Engineers' program for its region in California. The GGPA consists of six publicly-owned ports in the region; they are Oakland, Redwood City, Richmond, Sacramento, San Francisco, and Stockton. The GGPA is a cooperative organization that is dedicated to promoting trade through this area.

It is the continuing position of the GGPA that it is important to continue to modernize U.S. channels in order to provide adequate means for receiving ships of the world's fleet, to enhance trade with other countries in the world, and in particular to promote the need for growing export trade to bring the balance of payments under control. GGPA congratulates this subcommittee for its foresight in providing the means for assisting local ports in making a contribution toward the Nation's well being by meeting these needs.

Projects recommended for funding include Richmond Harbor, Oakland Outer and Inner Harbors, Sacramento River Deep Water ship channel, and San Francisco Bay to Stockton (John F. Baldwin & Stockton Ship Channels). GGPA recommends approval of the amounts included in the President's budget as adequate to meet the needs in FY 1989.

In addition, the GGPA recommends changes to the operations and maintenance allocations of an increase to $2 million for drift removal (to repair the debris dock at the San Francisco Operations Yard), and an increase to $1.7 million to provide improvements to the Bay-Delta Model. Both of these recommendations are included on the C-MANC list of projects.

All these projects represent a significant increment of improvement in the facilities in the GGPA that are important for commerce and navigation. In addition they are important for the maintenance of readiness of the military installations in the GGPA region. For these reasons, the GGPA urges the approval of funding for the projects listed.

STATEMENT OF THE PORT OF OAKLAND, CALIF.

The Water Resources Development Act of 1986 (PL 99-662) authorized the project to improve the Oakland Harbor Navigation Channel. The Channel serves the vast port complex of the Port of Oakland on the mainland side of the San Francisco Bay inside the Golden Gate.

The Port of Oakland hails as one of the pioneers in the U.S. container shipping. It has achieved a remarkable growth in its maritime container trade from its log of 320,000 revenue tons in 1964 to over 13 million revenue tons in 1987 -- a large percentage of which is export. In participation of its role in the phenomenal growth of the Pacific Basin trade, Oakland, in the past 25 years has consistently modernized and added to its dockside facilities so that it has developed into one of the world's largest and most advanced seaports. One of its current high-priority development goals is to take advantage of its favorable and strategic location for intermodal operations by integrating and improving the shipping, railroad and trucking distribution facilities within its port areas.

The Federally authorized project for Oakland is to deepen the existing navigation channel from its depth of -35 feet water to a depth of -42 feet, and to widen certain portions of the channel for ship turn-around as well as for improved safety.

The improvements of the project are needed to keep pace with the design specifications and technology of the newer generation of containerships. The new containerships are larger and have deeper drafts. In Oakland, for example, American President Lines, a U.S. flag carrier line, has under construction a new fleet of C-10 containerships which needs 42 feet of water to operate fully loaded. The first of these ships will make its maiden call in Oakland in mid-June, 1988. The present channel was designed and last improved for the types of ship in service during the 1950's!

Since its authorization, this project is being expedited through the mutual cooperation of the Corps of Engineers and the local sponsor. The project design and environmental documents, the permit applications, and the local cooperative agreement -- have all been reviewed and are in a state-of-readiness waiting for the Corps Record of Decision (ROD). This will free the project for a "fast track" start for the first phase of the project this month.

There is a need for the local Corps District Office to prepare a supplemental NEPA environmental document on ocean dredge disposal for the second phase. The construction schedule for the project, therefore, is being revised. However, this will not in any way reduce the funds request for F.Y. 89.

The Port solicits the support and approval of this Committee for the appropriation of funds for the Oakland Channel Navigation Project funds for the coming fiscal year. The Port of Oakland is a highly valuable national economic asset both for peace and defense and the improved channel will greatly improve its effectiveness.

PREPARED STATEMENT

Senator COCHRAN. Thank you, Mr. Boerger. We appreciate hearing from you and appreciate your statement.

Mr. BOERGER. Thank you very much.

Mr. LANGNER. Submitting a statement on behalf of the city of Oceanside, is Mayor Larry Bagley.

[The statement follows:]

STATEMENT OF MAYOR LARRY BAGLEY OF OCEANSIDE, CALIF.

On behalf of the City of Oceanside, California and the Oceanside Harbor District, I urge the subcommittee to support funding for the following projects:

Oceanside Harbor Breakwater: The feasibility study to improve the harbor breakwaters is nearly complete and the Corps is expected to begin preconstruction engineering and design work in FY 1989. The Administration has requested $240,000; however in order to make sufficient progress on the two-year design phase for this project we are requesting $450,000. The subcommittee included $350,000 in last year's appropriation, but delays in the study have prevented the expenditure of any of those funds.

Improving the inadequate breakwaters is essential to protect lives and property in the harbor. Over the past thirteen years, design deficiencies of the breakwaters have resulted in ten deaths, 142 boating accidents, 56 serious injuries and over $4 million in property damage. The modifications will correct the serious surge problem which causes extensive property damage within the harbor and threatens the safety of military, commercial and recreational boaters. The Harbor District is currently spending over $4 million for dock rehabilitation and shoreline protection, the lifespan of which will be cut in half without modifications to the harbor.

Oceanside Experimental Sand Bypass System: The sand bypass system recently became operational for system testing and the Administration has requested $4,170,000 to continue this project. I hope the subcommittee will continue to support the sand bypass system which promises to reduce the frequency of dredging in the harbor and replenish the badly eroding beaches in Oceanside. Now that the system is in the testing phase, this experimental technology can be monitored to fully assess its benefits and application in other harbors.

Oceanside Harbor Dredging: The Oceanside Harbor District urges your support of an appropriation of $1,000,000 for maintenance dredging of the Oceanside Harbor entrance. This project is required to alleviate inner-harbor surge generated from shoaling at the harbor entrance until the Oceanside Experimental Sand Bypass System becomes fully operational.

Oceanside Harbor serves as the entrance to USMC Camp Pendleton for military vessels and provides berthing for the Coast Guard cutter Point Hobart. More than one-quarter of harbor traffic is commercial fishing boats or military vessels. Without your support, many of the harbors of refuge which cannot support their dredging requirements, such as Oceanside, would be jeopardized.

Coast of California Study: As a community which has sustained storm damages in the past because of beach erosion problems, the City of Oceanside and Oceanside Harbor District support the Coast of California Study and request that the subcommittee continue funding for this project. Our city as well as other coastal communities will benefit from the greater understanding this study will provide of the reasons for beach erosion along the California coast.

This request is submitted on behalf of the Oceanside Harbor District and its governing body, the City Council of the City of Oceanside, sitting as the Harbor District Board of Directors.

SANTA CRUZ HARBOR, CALIF.

STATEMENT OF BRIAN FOSS, PORT DIRECTOR, SANTA CRUZ PORT DISTRICT

Mr. LANGNER. Also with us here today is the Santa Cruz Port District general manager, Brian Foss.

Mr. Foss. Good afternoon. I would like to introduce the chairman of our commission, Mr. Joe Townsend, seated behind me.

We are reporting today that the dredging system jointly acquired by this body and the Santa Cruz Port District continues with impressive success. We have had two winners of an open harbor, and this is a record unprecedented. It protects the 1,000 harbor-related jobs and $14 million worth of gross product for our county, which is a large number for our small county. We thank you.

There is a big federal benefit of this. There are zero O&M costs for this project at this time.

We do come with a small request. We have a comprehensive study that is authorized by Public Law 99–662 and we would like that included in the fiscal year 1989 budget.

Thank you.

[The statement follows:]

STATEMENT OF BRIAN FOSS, PORT DIRECTOR, SANTA CRUZ PORT DISTRICT

REPORT AND PROPOSAL TO CONGRESS

Few stories have been as clearly concluded as the joint acquisition of the Santa Cruz Harbor Dredge "Seabright." For the first 23 years of its history, Santa Cruz Harbor survived only through yearly federal contract dredging of its perennially shoaled entrance. Long closures, great hardship and danger to sailors were continuing problems. In FY 1986, the federal government, under PL 99662, funded its share of a permanent dredging system for Santa Cruz. The system was completed in October, 1986. It has now completed two winter seasons. The results are nothing less than historic.

	Prior to October, 1986	Since "Seabright" Arrival - October, 1986
Average Number of Days Harbor Entrance Open to Navigation:	240 - 300	355 - 360
Cost to Federal Government to Clear Entrance:	$600,000/year to $1,000,000/year	0
Projected Total Cost to Federal Government for Remainder of Project Life (26 years):	Was projected to exceed $20,000,000	0
Loss to Port District and Marine Businesses due to Entrance Closure:	$ 10,000/day = $1,200,000/year (worst case)	No significant loss to date

Congress, the Corps, and the Port District can take pride in this exceptional project.

REQUEST

As a segment of the Port District's commitment to a dredging system, the federal government also committed, under PL 99662, to a comprehensive study of the Santa Cruz Harbor jetty system. The purpose of the study is three-fold:

A) to reduce the volume of sand entering the entrance;

B) to eliminate the breaking surf, which can be a hazard to vessels even when the harbor is dredged to depth;

C) to reduce the harbor surge which regularly damages marina structures.

The Port District asks that the Corps' portion of the study be funded in FY 89. The Port District has funded and stands ready to expend its share of the comprehensive study.

LOS ANGELES COUNTY NAVIGATION PROJECTS AND STUDIES

STATEMENT OF TED REED, DIRECTOR, LOS ANGELES COUNTY DEPARTMENT OF BEACHES AND HARBORS

Senator COCHRAN. Thank you very much, Mr. Foss.

Mr. LANGNER. Thank you, Brian.

Ted Reed, director of Los Angeles County Department of Beaches and Harbors.

Mr. REED. Mr. Chairman, I am Ted Reed, director of Los Angeles County Department of Beaches and Harbors. I manage about 31 miles of recreational beaches. We serve over 75 million people annually. That probably makes our coastline about the most heavily used and certainly one of the highest developed recreational resources in the nation.

These coastal beaches also serve as protective barriers defending billions of dollars in public and private property. However, severe storms in 1982, 1983, and, as you heard from the Senators and Representative Anderson, in 1988, have devastated these beaches and in particular, as they indicated, Redondo Beach which is within our area.

COAST OF CALIFORNIA STORM AND TIDAL WAVE STUDY

This January storm has cost an estimated $22 million in damage up and down Los Angeles County beaches, therefore, I urge your support and funding for two particularly important projects. The coast of California storm and tidal wave study and the Point Magoo to San Pedro breakwater study. That will enable our county to protect the multimillion dollar public and private investments in coastal facilities including tens of thousands of homes and businesses.

The coast of California storm and tidal wave study is currently in progress, however, it focuses only on San Diego County. A comprehensive study of the Los Angeles and Orange County coastal areas is needed at an estimated cost of $4.9 million, so we can develop an action program to reduce and, at the same time, prevent harmful effects of shoreline erosion.

This is a previously authorized federal study, which does not require local financial participation. We have already prepared coastline surveys and data collections since the 1940's and will spend an additional $900,000 for surveys in the next 2 years, all of which will be made available for the study.

SAN PEDRO BAY BREAKWATER STUDY

The second important project for the county is the Point Magoo to San Pedro breakwater study at an estimated cost of $316,000.

County beaches remain extremely vulnerable to future storms without proper shore protection, therefore, this proposed feasibility study is urgently needed to assist us in determining the most effective methods of shoreline protection at those points within the Santa Monica Bay and the San Pedro compartments which are most vulnerable to future storm attacks.

And last, as I have indicated in my letters, the County of Los Angeles additionally supports the north coast of Los Angeles County navigational survey and study, the Marina Del Rey Channel dredging project, the Santa Monica breakwater repair feasibility study, and the Redondo Beach breakwater project.

Thank you, Mr. Chairman.

Senator COCHRAN. Thank you, Mr. Reed, for your good statement. We appreciate your being here.

[The statement follows:]

STATEMENT OF TED REED, DIRECTOR, LOS ANGELES COUNTY DEPARTMENT OF BEACHES AND HARBORS

Summary of Requests by Los Angeles County Department of Beaches and Harbors

Energy and Water Development Subcommittees

Funding of various Corps of Engineers' studies and operation and maintenance projects:

1. Coast of California Storm and Tidal Waves Study (Approximate cost: $4,908,000)

2. North Coast of Los Angeles County Navigational Survey and Study (Approximate cost: $345,000)

3. Point Mugu to San Pedro Breakwater (Approximate cost: $316,000)

4. Marina del Rey Channel Dredging (Approximate cost: $1,500,000)

5. Santa Monica Breakwater Repair Feasibility Study (Approximate cost: $100,000)

6. Redondo Beach Breakwater (Approximate cost: $500,000)

The Board of Supervisors of the County of Los Angeles respectfully requests the serious consideration of the Congress of the United States for several projects urgently required to preserve and restore a vital and precious asset, the 75-mile shoreline of Los Angeles County.

The winter storms of 1982-83 and 1988 caused an estimated $22 million in damages. The County continues to work diligently to restore our beaches to their pre-storm condition because the eroded shoreline continues to be progressively more vulnerable to future storms. Los Angeles County has one of the most heavily urbanized and developed shorelines in the country; therefore, it is extremely important to fund and complete the studies requested below in order to help prevent future damage to public and private investments in shoreline facilities including tens of thousands of homes and businesses. Our beaches serve 75,000,000 visitors annually, making them one of the most heavily used recreational resources in the nation.

For several years we have also requested funding for continuation of a Federal survey of the north coast of Los Angeles County to determine feasible sites for construction of small craft berthing facilities and harbors of refuge. A major urban development adjacent to the Federal Channel in Marina del Rey has been approved in the local coastal zone management plan, thus giving this study a high priority. This, and other study requests are outlined below.

Coast of California Storm and Tidal Waves Study (Approximate cost: $4,908,000)

I wish to bring to the Committee's attention the severe shoreline erosion conditions existing along the coast of Southern California from Point Mugu to Dana Point. Moreover, the Committee is aware of the apparent lack of existing sand supplies for natural longshore transport and deposition on the area's beaches.

Over the years, the Committee has heard testimony that these adverse conditions are causing severe economic losses and social problems in numerous coastal communities located in the area. Therefore, I respectfully request the Committee include additional funds for the Coast of California Storm and Tidal Waves Study in Fiscal Year 1989 to undertake a comprehensive study in the important coastal area located in Los Angeles and Orange Counties, with a view to developing the basis for an action program to reduce and, where possible, to prevent the harmful effects of shoreline erosion.

The Corps should be directed to place emphasis on the reach of shoreline from Point Mugu to Dana Point. The Corps of Engineers should also be directed to accomplish the study at 100 percent Federal expense, since this is a previously authorized Federal study, which did not include local participation. Nevertheless, the County of Los Angeles will be expending $900,000 over the next three years for shoreline profiles and has prepared coastline surveys and data collections since the 1940's. This information will be made available for the study.

North Coast of Los Angeles County Navigational Survey and Study (Approximate cost: $345,000)

Every year there is a growing demand for small craft harbor facilities in the United States, and nowhere is the demand more acute than in the Los Angeles metropolitan area.

The Marina del Rey Small Craft Harbor, a joint Federal/County project, has been greatly successful since its inception. Over $4.6 million has been expended by the Federal government since the project was first authorized in 1954. Matching funds from the State and County have topped $19 million, and the private sector has invested over $175 million in a great variety of public facilities. Both government agencies and the private sector alike have realized a substantial financial return from Marina del Rey.

The local Coastal Zone Management Plan has identified a site adjacent to the Marina del Rey Small Craft Harbor for a new boat basin connecting with the existing navigation channel. A navigation study costing $250,000 is urgently needed for this area which is possibly the last significant opportunity to provide small craft facilities on the Los Angeles County coast.

Point Mugu to San Pedro Breakwater (Approximate cost: $316,000)

The 1982-83 and 1988 winter storms caused widespread damage to the Los Angeles County shoreline. The storms, coupled with

unusually high tides, caused extensive damage to beaches and shoreline facilities estimated at $22 million.

While much of the sand has returned to the County's beaches, they remain vulnerable to future storms without proper shore protection. This feasibility study should be funded in order to help determine the most effective methods of shoreline protection at those points within the Santa Monica Bay and San Pedro compartments which are most vulnerable to future storm attack.

Marina del Rey Channel Dredging (Approximate cost: $1,500,000)

During early 1987, the Corps dredged the Marina del Rey Entrance Channel to provide for continued safe navigation. However, only beach-quality material was removed, leaving over 100,000 to 200,000 cubic yards of non-beach-quality material still above design depth. A bioassay and offshore disposal will be required to remove this material within the next year.

Santa Monica Breakwater Repair Feasibility Study (Approximate Cost: $100,000)

The City of Santa Monica Pier Restoration Corporation is currently in the process of rebuilding the pier, severely damaged in the 1982-83 storms. An integral part of the pier redevelopment involves a re-establishment of a breakwater. Therefore, the City of Santa Monica is interested in having the Army Corps of Engineers study the feasibility of rebuilding the breakwater, which could protect the new pier. We support the inclusion of $100,000 in the President's Budget.

Redondo Beach Breakwater (Approximate cost: $500,000)

We request sufficient funds for planning, engineering, and design for the Redondo Beach breakwater storm damage improvement project to be provided to complete the study under an expedited schedule. The January 1988 storms demonstrated how vulnerable the harbor development is, which suffered $16 million in damages.

PREPARED STATEMENT FOR THE RECORD

Mr. LANGNER. Also present or submitting statements, Mr. Chairman, are:

Richard Parsons, general manager of the Ventura Port District; for the County of Orange are Harriet Weider, supervisor; George Osborne; Carl Nelson, director of public works, harbors, beaches and parks; for the Port of Stockton, the chairman of the port commission, Philip Wallace; and Alex Krygsman, port director, who has been before you many times.

For Port Hueneme/Oxnard Harbor District, Bob Jennings and Ed Millan, commissioners; and Ray Fletcher, commissioner; for the Port of San Luis Harbor District, Stewart Jenkins; Humboldt Bay Harbor Recreation and Conservation District Commissioner, Robert Davenport; Jack Alderson, chief executive officer; and Les Westfall, Westfall Stevedore Co., Eureka.

For the city of San Rafael, submitting a statement, Dave Bernardi, director of public works; for San Mateo County Harbor District, Jean Flocks, commissioner; and Don Guluzzy, general manager, with a statement to submit; for the Port of Redwood City, Walter Small, Guy Smith, and Ray Castle, commissioners; and Floyd Shelton, executive director, with a statement to submit; for California Marine Parks and Harbors Association, Bob Wright, emeritus.

For Los Angeles County, Chris Datwyler; for Contra Costa County, Tom Powers, supervisor; Rod Lundin, Michael Gasparro, James Kuebelbeck, Williams-Kuebelbeck & Associates; George Wentz, Charles Abbott & Associates; Robert D. Nichol, Moffatt & Nichol Engineers; Tom Miles, Moffatt & Nichol Engineers; Martin Miller, Miller Consultants; Charles Cutting, Sverdrup Corp.; Les Sullivan, Sverdrup Corp.; and Jim Barich, The Irvine Co.

I hope you would agree, sir, that that is a reasonably prompt, concise, representation of 65 California projects.

We thank you for your time.

Senator COCHRAN. Mr. Langner, that is very impressive. It is awesome, as my son would say.

Mr. LANGNER. Thank you, sir.

Senator COCHRAN. We appreciate your being here and we appreciate the organizational skills that you bring to bear in presenting the testimony and in giving the committee the information which you have today.

We are glad you were all here and we, each year, look forward to the opportunity to greet you and to receive your suggestions for our appropriations for this bill.

We wish you well. Good fortunes. Thank you.

[The statements follow:]

STATEMENT OF VENTURA PORT DISTRICT

Ventura Harbor is located along the Southern California coastline in the City of San Buenaventura, some 30 miles downcoast from Santa Barbara, and approximately 60 miles northwest of the City of Los Angeles. Ventura Harbor became operational in 1963, and it soon became evident that the Harbor was plagued by a serious entrance problem. In May 1968, the Ventura Harbor became a Federally approved project committing the U. S. Army Corps of Engineers to provide maintenance dredging and a solution to the entrance problem. A detached breakwater and sand trap area, completed by the Corps of Engineers in 1972, alleviated some of the more damaging difficulties but continuing navigational problems have persisted. Additionally, the need for annual maintenance dredging continued, and the Corps of Engineers and the Ventura Port District have conducted maintenance dredging of the Harbor entrance within the limits of their jurisdiction from 1968 through the present time.

In recent years an aggressive development program has resulted in many new facilities, and others that are scheduled for construction in the near future. These include an extensive commercial facility, primarily oriented to the commercial fishing industry and the servicing of the offshore oil industry. The total investment for these improvements is approximately $30 million, with $1,300,000 being funded by the Economic Development Administration. In addition, the headquarters for the Channel Islands National Park has been completed, and large numbers of the public are now enjoying the displays and programs of the National Park Service. A 225 room resort hotel complex was completed in 1984 at a cost of approximately $27 million, and a second 400 room hotel and conference center is planned.

All of the operations of the Harbor, particularly those related to commercial fishing and the support boats for the oil industry, are highly dependent upon a navigationally adequate entrance to the Harbor. It is therefore respectfully requested that the Congress support the Army Corps of Engineers FY89 Civil Works Budget request of $1,515,000 for the maintenance dredging of the Ventura Harbor entrance channel. The area of Corps of Engineers responsibility is illustrated in Photo No. 1.

The U. S. Army Corps of Engineers and the Ventura Port District are in the process of finalizing the feasibility phase of a cost shared navigation study of the existing deficiencies associated with the Ventura Harbor entrance. Photo No. 2 illustrates the study area. The study will recommend the construction of cost shared improvements or modifications of the existing Federal facilities to improve navigational safety within the harbor entrance and to reduce shoaling and maintenance dredging. Said improvements will include short extensions of the breakwater and of one of the existing jetties as well as the construction of a new 1000± ft. groin.

Sufficient monies were appropriated by the Congress in FY88 to fund the feasibility phase of this navigation study to completion. In order to assure that this project moves forward expeditiously, the Port District is respectfully requesting that the Congress provide FY89 funding in the amount of $300,000 to initiate the planning, engineering and design phase of the review study.

STATEMENT OF PORT OF REDWOOD CITY, CALIF.

The Port of Redwood City appreciates the opportunity to convey to the Subcommittee the importance of the scheduled FY 1989 maintenance dredging of the Redwood City Navigation Project.

The Port of Redwood City is a modern deep water port 18 miles south of San Francisco. The Navigation Project serves five berths and can accommodate vessels to the depth of 32 feet 6 inches. Cargoes handled at our port include scrap metal, packaged lumber, general cargo, logs, salt, cement, petroleum, heavy lifts and assorted bulk commodities, both liquid and dry. The port is served by the Southern Pacific Railroad, all major stevedores and is located one mile from U.S. 101.

Present tenants of the Port of Redwood City who regularly use the Redwood Creek Channel include Lone Star Cement, Kaiser Cement, Pilot Petroleum, Pope & Talbot Lumber Company, Simsmetal U.S.A. Corp. (Levin Metals Corp.) and the United States Geological Survey, among others. Additional users of the Channel include Leslie Salt, Lockheed Corporation and firms which ship bauxite and slag (precious metals), as well as those requiring access for ship lay up.

The Redwood City Navigation Project includes a dredged channel 500 feet wide and 30 feet deep at Mean Lower Low Water ("MLLW") across San Bruno Shoals in San Francisco Bay. The Redwood Creek Channel, at the entrance to the Port, is at the confluence of the Westpoint Slough and Redwood Creek, with a turning basin at that location.

While the depth of water over San Bruno Shoals is current reported at 30 feet (MLLW), dredging has been completed along side Berths 1, 2, 3, 4 and 5 to a depth of 36 feet (MLLW).

The facilities described above, together with other turning basins and a pleasure boat channel, was completed in 1965, and maintenance dredging was last accomplished by the U.S. Army Corps of Engineers in 1984. The Redwood City Harbor and Channel

Project was first authorized by the United States Congress in 1910, and on six occasions since then.

Maintenance dredging is required every five years in order to allow the Port to meet its commercial obligations to tenants and other users of marine shipping services. For this reason the Corps of Engineers has proposed to conduct maintenance dredging in 1989. An amount sufficient to accomplish this objective, $2,090,000, has been included in the President's FY 1989 Budget. According to Corps' staff, this amount should be sufficient to conduct the required dredging activity. It is our hope that the Subcommittee on Energy and Water Development will concur with the Corps of Engineers and ourselves, and that this essential maintenance dredging will proceed in 1989.

Attached, for inclusion in the record of this hearing, is a letter from Congressman Tom Lantos (in whose District the Port of Redwood City is situated) supporting this request for funding.

The Port of Redwood City appreciates this opportunity to explain the economic impact and benefits of this dredging project.

STATEMENT OF PORT OF STOCKTON, CALIF.

I am Alexander Krygsman, Port Director of the Port of Stockton, Stockton, California.

The Port of Stockton Deepwater Channel Deepening Project is an authorized project under construction.

The Port of Stockton is primarily a bulk port that serves industry and agriculture in the San Joaquin Valley in California and the bulk imports and exports of the Western States, including the coal areas of these States.

The Port of Stockton recognized as far back as 1952 that deeper channels would be needed for the movements of bulk cargoes and requested the Corps of Engineers to deepen the channel in 1952. Coal, grain, fertilizers and many other bulk materials require deeper channels to serve the larger bulk carriers.

The Nation needs ports that can handle larger more economical and more fuel efficient vessels close to the production areas, both agricultural and industrial to conserve energy.

The Port of Stockton is such a port. Its channel has now been deepened and only associated work such as levee protection and completion of wildlife areas still needs to be completed, and this work deserves continued funding to completion. We urge you to appropriate the same amount as contained in the proposed President's budget.

I want to thank the committee for its past support that made it possible to do the dredging. Vessels are now utilizing the extra depth and there has been great interest by shippers to increase drafts and tonnages on the vessels as was anticipated.

STATEMENT OF CITY OF SAN RAFAEL, CALIF.

It is a pleasure to appear before you again. My purpose in appearing before you is to acquaint you with the San Rafael City Council's continued commitment to the San Rafael Flood Control Study currently in progress.

Recently, the Corps of Engineers completed the Reconnaissance Study for this project. It has been submitted to Washington for approval. Three alternatives out of nine were identified as being cost effective and potentially feasible.

The next phase in this process is to complete the Feasibility Study. The three alternatives will be fully analyzed and a candidate project will emerge. Before this study can begin, the City must become a financial partner equal to one half the cost of the study. On April 4, 1988, the City Council adopted a resolution approving the cost sharing agreement with the Federal Government. On April 18, 1988, the funds will be appropriated for this work.

The City Council wishes me to inform you that it is fully commited to the ultimate implementation of a project. The Council has instructed staff to explore the various available funding options and, further, to assist the Council in taking the necessary steps to have the funding in place to meet the City's part of the ultimate project funding.

Thank you for your consideration.

STATEMENT OF CLAIR HILL, CHAIRMAN, CALIFORNIA WATER COMMISSION

Senator COCHRAN. Next, we have Mr. Clair Hill, who is the chairman of the California Water Commission, to testify on behalf of California water resource projects.

Mr. Hill, we welcome you to the hearing. We know that you have others who are here with you. We hope that you can make your presentation brief, as others have because of time constraints, but we do want to hear from you and we appreciate your coming.

Mr. HILL. Thank you very much. We will move rapidly.

Mr. Chairman, I am Clair Hill, chairman of the California Water Commission. I am accompanied by Vice Chairman Stan Barnes; members Martin Mannich, Audrey Tennis, Jim Lanahan and, also, our executive secretary, Orville Abott.

We have coordinated our presentations throughout the state and held hearings pretty well throughout the state to get everybody along with us.

As far as the Corps budget is concerned, we are generally in support of it. We have some additions which we will present to you in our written testimony.

As far as the Central Valley project of the Bureau of Reclamation is concerned, we are asking for some additional funds to properly catch up on the backlog of operation and maintenance in that program.

With that, I will submit my full prepared statement and begin our presentation.

[The statement follows:]

STATEMENT OF CLAIR A. HILL, CHAIRMAN, CALIFORNIA WATER COMMISSION

Mr. Chairman and members of the Committee, I am Clair A. Hill, Chairman of the California Water Commission, an official agency of the State of California. The Commission is composed of nine representative citizens from throughout the State. The Commission is charged by statute with representing state and local interests before this Committee. We have coordinated our presentation with representatives of local agencies. On behalf of the California Water Commission, I would like to express our sincere appreciation for the support this Committee has given California water resources and flood control appropriations over the years. I am privileged to appear before you with the official recommendations of the State of California for fiscal year 1988-89 appropriations.

CORPS OF ENGINEERS

We support the funding for all projects of the Corps of Engineers (Corps) included in the President's budget. Some of the projects are briefly described below:

General Investigations - Surveys

a. Investigation of the Northern California Streams, Sacramento Metropolitan Area Interim, to determine flood control needs of the growing metropolitan area of Sacramento.

b. A study of serious flooding problems along the San Rafael Canal in Marin County caused by runoff and high tides in San Francisco Bay.

c. Los Angeles County Drainage Area, one of the Corp's most urgent studies.

d. The Corps' continuing examination of flooding problems along the San Francisco Bay Shoreline in San Mateo, Alameda, Napa, and Solano Counties.

e. On the Kaweah, Tule and Kings Rivers in the San Joaquin River watershed, evaluation of the feasibility of providing additional storage for flood protection and possible increased conservation storage. On the Calaveras River, a one year reconnaissance study to upgrade the hydrology and flood control alternatives.

f. Interim No. III of the Santa Ana River Basin and Orange County study addressing serious flooding problems in rapidly urbanizing Orange County.

g. The Final Report of the Santa Ana River Basin and Orange County Study, addressing some of the serious flooding problems in San Bernardino County.

h. An investigation of Imperial County and San Diego County streams which drain into the Imperial Valley.

i. The Northern California Streams-American River Watershed investigation will move to the feasibility level.

j. The Sacramento-San Joaquin Delta Investigation, which would allow the Corps to participate with the Departments of Water Resources and Fish and Game, the Bureau of Reclamation, and local agencies in important ongoing programs to resolve flood control, fisheries, and water conveyance issues.

k. Continuation of the flood control investigation of the Walnut Creek Basin in Contra Costa County.

l. Initiation of an investigation of the San Lorenzo River in Santa Cruz County to allow the flood control channel to operate to design capacity.

General Investigations, Preconstruction Engineering and Design

a. The tentative selected plan for Caliente Creek consisting of a flood detention dam and levee and channel works to provide flood protection.

b. Investigation of the Northern California Streams, Dry Creek Watershed, located in portions of Sacramento and Placer counties where urbanization of the metropolitan area is occurring.

c. The recommended plan for improvement of the Guadalupe River in Santa Clara County including the widening and deepening by excavation of one or both sides of the Guadalupe River and the construction of an underground channel bypass conduit.

d. The continuation of the investigation of the Upper Guadalupe River and Coyote and Berryessa Creeks in Santa Clara County at the feasibility level.

e. Reevaluation of the flood control plan for the Napa River.

f. Continuation of the investigation of the outlet channel on Cache Creek from Clear Lake.

Construction

a. Improvement of the Santa Ana River Mainstem Project providing for construction of the Seven Oaks Dam, flood plain management of the flood overflow area in the Santa Ana River between the Seven Oaks Dam and the existing Prado Reservoir, the enlargement of Prado Dam to increase the reservoir storage capacity, and other facilities located downstream.

b. The Pajaro River project, which will protect portions of the City of Gilroy from damaging flood flows along Uvas Creek. The Santa Clara Valley Water District will participate in financing the project.

c. The Redbank and Fancher Creeks project in the Fresno-Clovis area, which consists of modifications of the existing Big Dry Creek Dam, construction of the Fancher Creek Dam, and three detention basins. Fresno Metropolitan Flood Control District will participate in financing the project.

d. The Fairfield Vicinity Streams project for channel improvements. A cost sharing agreement with the City of Fairfield provides for staging of facilities.

e. The Merced County Streams project, for which the local sponsor, Merced County, will share costs to provide for staging of facilities.

f. The Wildcat and San Pablo Creeks project, for which the local sponsor, Contra Costa County, will share in the construction costs.

g. Continued construction of the Corte Madera Creek project in Marin County.

h. Continued construction on the Sacramento River Bank Protection project.

i. Selective channel clearing on the Lower San Joaquin River to improve its flood carrying capacity.

j. Continued construction on channel improvements for Walnut Creek, extending from the City of Walnut Creek to Suisun Bay.

k. Channel improvements on the San Luis Rey River Flood Control project. Funds to initiate construction were appropriated in FY 86-87.

l. The enlargement and raising of levees around the Cache Creek Settling Basin in Yolo County.

BUREAU OF RECLAMATION

We are supporting FY 88-89 funding for planning and construction programs of the Bureau of Reclamation (Bureau) in the President's budget. Some of the programs are briefly described in the following paragraphs:

a. Continuing efforts to improve the passage of fish at the Red Bluff Diversion Dam.

b. Continuation of the joint federal-state study of alternative solutions to irrigation drainage problems on the west side of the San Joaquin Valley.

c. Continuation of the joint federal-state feasibility study of the flood threat to the San Luis Canal from the Arroyo Pasajero Cross Drainage.

d. Continuation of the joint federal-state Trinity River Restoration program, which includes construction of the Buckhorn Mountain Debris Dam and a fish hatchery.

Small Reclamation Projects Act Loans — This loan program is important to California and we believe to the entire western United States. We support funding of the loan applications in the President's budget as described below:

a. Elsinore Valley Municipal Water District is constructing levees and channels to stabilize Lake Elsinore in Riverside County.

b. Rancho California Water District in Riverside County is constructing water wells, recharge basins, and pipelines.

RECOMMENDATIONS FOR ADDITIONAL FUNDS

The Commission is recommending that funds be appropriated for several Corps and Bureau projects. These projects merit special consideration.

Corps of Engineers

	President's Budget	Commission's Recommendation
Dry Creek (Warm Springs Lake)	$ 750,000	$ 1,650,000
Goleta Vicinity Streams	-	300,000
Santa Barbara County Streams-Lower Mission Creek	-	300,000
New Melones Lake	-	1,500,000
San Francisco Bay Shoreline-Santa Clara and Southern Alameda Interim	-	250,000
Northern California Streams-Yuba River Watershed	-	500,000
San Joaquin River Basin-San Joaquin River System Sedimentation Investigation	-	500,000
Sacramento River Flood Control Project	-	3,485,000
Inspection of Completed Works-Sacramento River Flood Control Project	-	900,000
Total	$3,035,000	$9,385,000
Total Additional		$6,350,000

Bureau of Reclamation

	President's Budget	Commission's Recommendation
Auburn-Folsom South Unit-CVP	$1,500,000	$1,700,000
San Bernardino Valley Ground Water Investigation	-	100,000
San Bernardino County (Day Creek) Loan	-	12,400,000
United Water Conservation District Loan		11,308,000
San Felipe Division-CVP	500,000	1,740,000
Off Stream Storage Investigation	-	475,000
Operations and Maintenance Programs-Central Valley Project	44,959,000	53,559,000
Total	$46,959,000	$81,282,000
Total Additional		$34,323,000

The Commission is supporting funding for two loan applications under the Small Reclamation Projects Act. These are the applications of the United Water Conservation District and San Bernardino County (Day Creek). Recommended funding for the United Water Conservation District will complete construction of the Freeman Diversion project in Ventura County. Recommended funding for Day Creek will allow timely and cost effective construction of this project.

The President's budget for FY 88-89 for the operation and maintenance of the Central Valley Project (CVP) is insufficient to meet the Bureau's obligations for maintenance of completed projects while the Bureau apparently is shifting funds to complete new projects. The President's budget of about $45 million for operation and maintenance of the CVP is deficient by about $8.6 million to properly operate and maintain the existing (CVP) facilities and to meet the Bureau's other project obligations.

The Commission is supporting additional funds for two separate programs within the San Felipe Division. These are $940,000 for cathodic protection and other deficiencies in the Hollister Conduit of the San Felipe Division, and $300,000 for continuation of the Bureau's Watsonville Service Area feasibility study of conveying water to the Pajaro Valley Water Management Area.

Appropriations in FY 88-89 are also supported for continuation of the Off Stream Storage investigation initiated in FY 87-88 to review potential sites in the Sacramento and San Joaquin Valleys, and the San Bernardino Valley Ground Water Project where the Bureau is exercising a coordinating role and providing expertise in developing a plan to manage the ground water basin to relieve problems in the City of San Bernardino.

The Commission also supports the recommendations of the Colorado River Board for appropriations of funds for other Bureau programs.

U.S. Fish and Wildlife Service

The Commission is reaffirming its support of an appropriation for the rehabilitation of the Coleman National Fish Hatchery, and recommends an appropriation of $6.5 million for the construction of water and effluent treatment facilities, prerelease ponds, brood stock holding and spawning facilities, and rehabilitation of the barrier dam. The Commission, the Department of Water Resources and the Department of Fish and Game support the concept of cost sharing between the Federal Government and the State of California similar to that which exist for the Trinity River restoration program. Under that program, the State and local agencies pay 15 percent of the costs.

Thank you for this opportunity to submit California's recommendation.

STATEMENT OF RAY BARSCH, GENERAL MANAGER, CALIFORNIA STATE RECLAMATION BOARD

Mr. HILL. I will now introduce members of the delegation and I have asked them all to keep their comments to the minimum.

The first one will be Raymond Barsch, who is executive secretary of the State Reclamation Board, which is responsible for the entire Sacramento-San Joaquin flood control project.

Mr. BARSCH. Thank you, Mr. Chairman.

I am Ray Barsch, general manager of the Reclamation Board. I appreciate the opportunity to appear before you with the recommendations that were adopted by the board on March 18, 1988.

The board's final recommendations are in a statement which has been submitted. The board strongly urges appropriations in the amount listed in the summary for the 20 projects which are directly related to flood control in the Central Valley.

The board would like to emphasize five projects not fully covered in the President's budget, which include two new projects—the Yuba River watershed and the San Joaquin River system. Both of these areas have sustained flood damage and the solution needs to be determined.

The Corps of Engineers has determined that there is levee restoration work required in the Sacramento metropolitan area. The board is requesting $1,200,000 to be added to the President's budget to prepare the design for this work.

Also, under the inspection of completed works, an additional $900,000 is needed to continue the geo-technical work on the Sacramento River flood control levee system.

The last item is the need to do what is called riffle restoration on the Sacramento River in the area of the Glen-Colusa Irrigation District intake. The river changed and is threatening the ability to divert water that irrigates over 150,000 acres, including three wildlife refuges. A total of $300,000 is needed for the design of this work.

Thank you again for this opportunity.

[The statement follows:]

STATEMENT OF RAY BARSCH, GENERAL MANAGER, CALIFORNIA RECLAMATION BOARD

THE RECLAMATION BOARD'S
RECOMMENDATIONS FOR
FEDERAL FLOOD CONTROL PROJECTS
1988-89 Summary in $1,000

Corps of Engineers' Projects	Page	Board Recommends	President's Budget
I. Surveys	1		
A. Northern California Streams	1		
-- American River Watershed	1	600	600
-- Sacramento River Metropolitan Area	1	300	300
-- Yuba River Watershed	1	500*	--
B. Sacramento-San Joaquin Delta Inv.	2	230	230
C. San Joaquin River Basin	2		
-- Kings River - Pine Flat Dam	3	250	250
-- Tule River	3	150	150
-- Kaweah River	3	350	350
-- Calaveras River	3	450	450
-- San Joaquin River System	3	500*	--
II. General Investigations (PE&D)	3		
A. Cache Creek Upper Basin	3	250	250
B. Caliente Creek	3	1,200	1,200
C. Dry Creek	4	400	400
III. Construction	4		
A. Cache Creek Settling Basin	4	3,250	3,250
B. Redbank and Fancher Creeks	4	4,500	4,500
C. Fairfield Vicinity Streams	4	2,400	2,400
D. Lower San Joaquin River and Tributaries	5	1,500	1,500
E. Merced County Streams	5	4,000	4,000
F. Sacramento River Bank Protection Project	5	10,000	10,000
G. Sacramento River Flood Control Project	6	3,485*	2,285
IV. Operations and Maintenance	6		
A. Inspection of Completed Works - Sacramento River Flood Control Project	6	900*	--
U. S. Bureau of Reclamation Projects	7		
A. Auburn-Folsom South Unit	7	1,700*	1,500

*These amounts are different from the President's recommended amounts.

The Reclamation Board's Recommendations

The Reclamation Board, as the State agency which furnishes required local assurances for federal levee and channel projects in California's Central Valley, respectfully submits this statement of support for the following projects.

While all projects are important to the health, safety, and well-being of Central Valley residents, the surveys and projects described as follows are of particular importance to The Reclamation Board.

I. Surveys

A. Northern California Streams:

This survey, authorized in 1958 and 1962, is a study of the Sacramento River and its tributaries, in regard to flood control measures.

American River Watershed

The Corps has completed a reconnaissance study of alternate means of flood control in the American River watershed. This study provided information for the Bureau of Reclamation and the State Department of Water Resources on the flood control for the Lower American River.

The Reclamation Board has sent a letter of intent to the Corps of Engineers indicating that the Board will act as the local sponsor for the feasibility study scheduled to begin mid-1988. The Board supports the $600,000 for this very critically needed investigation.

Sacramento River Metropolitan Area

The investigation will be initiated in fiscal year 1988. The work accomplished under Inspection of Completed Works (see Section IV) helped identify areas within the Sacramento River Flood Control Project that need further work. The Reclamation Board supports the $300,000 for this study.

Yuba River Watershed

This would be a one-year reconnaissance-level study of alternatives for flood control and related purposes in the Yuba River watershed. The 1986 flood and the resulting levee failure made everyone aware that much more information is needed to provide a solution to the problems in this area. The Reclamation Board supports $500,000 for this investigation.

B. Sacramento-San Joaquin Delta Investigation:

Study area is located in Sacramento, Yolo, San Joaquin, Contra Costa, and Solano Counties and extends from the southern limits of the City of Sacramento, the City of Stockton and west to Suisun Bay. Area consists of about 700,000 acres of land segregated into some 100 tracts and islands, bounded by interconnecting waterways, which are confined by 1,100 miles of levees which normally prevent the lands from being inundated by high tides or high stages. Lands within these levees are among the most productive agricultural lands in the State. The survey

considers flood control, associated recreation and environmental problems, Delta water transfer and salinity intrusion problems. A critical need for levee rehabilitation throughout the Delta exists.

Current activities include coordination with the U. S. Bureau of Reclamation and State Department of Water Resources to formulate the comprehensive plan. The Reclamation Board supports the $230,000 for this investigation.

C. San Joaquin River Basin:

This survey, authorized in 1964 and initiated in 1968, encompasses the southern portion of the Central Valley, including part of the Delta-Central Sierra area and all of the San Joaquin and Tulare Lake Basins. The study will investigate the problems of flood control, irrigation, municipal water supply, power, recreation, fish and wildlife, and water quality. The study area is the site of many complex water supply and water transportation problems. Flooding is a major problem in the study area. During the severe floods of 1969, 1983, and 1986, the area experienced extensive damages. Projects to be considered include: dams and reservoirs, stream diversion, bank protection, and levee and channel improvement.

The San Joaquin River System - Sedimentation Investigation would be a new one-year reconnaissance-level study to investigate the reach of the San Joaquin River between Gravel Ford and the confluence of the Merced River including the bypass system. Also, all the eastside tributary streams that bring flood waters and debris into this area would be investigated to determine what alternative solutions are available.

The Reclamation Board supports the following studies:

Kings River - Pine Flat Dam	$250,000
Tule River	150,000
Kaweah River	350,000
Calaveras River	450,000
San Joaquin River System	500,000
TOTAL	$1,700,000

II. General Investigations (PE&D)

A. Cache Creek Upper Basin:

The Corps of Engineers has completed its feasibility report regarding water resources development in the Cache Creek Basin. The report recommends enlarging the outlet channel of Clear Lake in the upper basin to reduce flooding of development around the Lake.

This report states that a major flood problem exists along the rim of Clear Lake. Historical inflows to the Lake temporarily raise the lake level causing significant damage to lakefront development. Serious flood damages occurred in 1958, 1970, 1983, and 1986 causing estimated damages of $900,000, $500,000, $1,500,000 and $3,500,000, respectively. This problem can be economically solved by increasing the discharge capability of the Lake's outlet channel.

The Reclamation Board supports $250,000 which will complete the design memorandum for this project.

B. Caliente Creek:

The Corps of Engineers and the Kern County Water Agency (KCWA) are conducting feasibility studies for consideration of flood protection measures on Caliente Creek. These studies are being cost-shared on a 50-50 basis between the Corps and KCWA. Past floods have caused serious damage and disruption to the communities of Arvin and Lamont and surrounding agricultural areas. The flood of March 1983 caused damages estimated at $25 million. The tentative selected plan includes a 16,000 acre-foot flood detention reservoir and downstream channel improvements to carry 500 cfs releases from the reservoir. The KCWA and other local representatives have been exceptionally supportive of developing flood control for this area.

The Reclamation Board supports the $1,200,000 needed for the preconstruction engineering and design.

C. Dry Creek:

A feasibility report on Dry Creek will be completed by October 1988. Funds for this study are being shared on a 50-50 basis with Sacramento and Placer Counties. Serious flooding occurred in Roseville and Rio Linda in February 1986 emphasizing the need for flood control measures in this area. The Board supports $400,000 to do the preconstruction engineering and design.

III. Construction

A. Cache Creek Settling Basin:

The Corps of Engineers has completed its feasibility report regarding water resources development in the Cache Creek Basin. The report recommends enlarging and raising the levees around the existing Settling Basin to increase the Basin's sediment storage capacity. The Settling Basin is now full and is again affecting the flood-carrying capacity of the Yolo Bypass. The current funding will be for the first year's construction.

The Board supports the $3,250,000 for this project.

B. Redbank and Fancher Creeks:

The Corps of Engineers has completed its General Design Memorandum. The report recommends single-purpose flood control improvements on Redbank, Fancher, and Pup Creeks and Alluvial Drain; and dual-purpose flood control and recreation facilities on Big Dry Creek. The plan provides for enlargement of the existing Big Dry Creek Dam and Reservoir, a new dam on Fancher Creek, and detention basins on Redbank and Pup Creeks and Alluvial Drain.

The project was authorized for construction by the Water Resources Development Act of 1986, and The Reclamation Board supports the $4,500,000 for continuing construction of this project.

C. Fairfield Vicinity Streams:

The project is located in the vicinity of the cities of Fairfield and Suisun in Solano County; the drainage basin comprises 45.8 square miles. There are five streams on

which improvements are to be constructed. These are Ledgewood, Laurel, Union Avenue, Pennsylvania, and McCoy Creeks. The project as presented in the Corps of Engineers' Phase II GDM included channel improvements and diversion of three creeks, levees on two of the creeks, and construction of recreation facilities.

On May 29, 1986 The Reclamation Board signed the assurance agreement so that this project could move to construction. The first phase has been completed and The Reclamation Board supports the $2,400,000 for continuing construction of this project.

D. Lower San Joaquin River and Tributaries:

The Lower San Joaquin River was authorized in 1944 and by PL 98-63, the 1983 Supplemental Appropriations Act. The existing project completed in 1968 consists of channels, levees, and riverbank revetment from Friant Dam on the San Joaquin River to Stockton, a distance along the River of about 225 miles.

The needed work includes selective channel clearing and removal of debris and bars to restore channel capacity to historic levels on the San Joaquin River. Initial work in the Eastside Bypass has been done which was identified as an emergency situation. The next phase of the work will be covered in a joint EIS-EIR, which is being reviewed at this time.

The Reclamation Board supports the $1,500,000 for continuing the San Joaquin River construction project.

E. Merced County Streams:

This project, authorized in 1970, will provide flood protection for Castle Air Force Base, the City of Merced, and adjacent suburban and agricultural lands.

The Reclamation Board is prepared to sign the assurance for the first phase of this project and supports the $4,000,000 to start construction on Castle Reservoir.

F. Sacramento River Bank Protection Project:

The project, authorized in 1960, is a long-range Federal-State effort, aimed at preserving the existing project levee system of the Sacramento River. These existing levees, which offer flood protection to the Central Valley over a reach of 192 miles, are very old and subject to constant erosion. The Sacramento River Bank Protection Project work consists of sloping and placing stone protection at those points which are identified each year as the most critical. Again in the February 1986 flood, increased damage occurred which further threatens existing project levees.

The Reclamation Board supports the $10,000,000 for the Sacramento River Bank Protection Project.

G. Sacramento River Flood Control Project:

This project was authorized in 1917 and modified by various Flood Control and/or River Harbor Acts in 1928, 1937, and 1941.

The project comprises a comprehensive system of levees, overflow weirs, drainage pumping plants, and flood bypass channels, extending along the Sacramento River from Collinsville near its mouth in Suisun Bay, upstream to Chico Landing, and along the lower reaches of principal tributaries; together with channel clearing, rectification, snagging and bank protection on the Sacramento River and tributaries.

Maintaining the stability of the project levees has been a continuing problem along Knights Landing Ridge Cut, the Colusa Basin Drain, and near the junction of Cache Slough and the Yolo Bypass. Slips in the Knights Landing Ridge Cut, Colusa Basin Drain and Cache Slough levees are recurring and, in the past, PL 99 emergency levee repairs have been accomplished to restore the levee grade and section. The Knights Landing/Colusa Drain levees protect about 100,000 acres of highly productive agricultural land, with about 2,000 people living within the area.

The Reclamation Board supports the $2,285,000 to complete construction of the cross levee on Cache Slough, and $1,200,000 to initiate the design memorandum for levee restoration in the Sacramento metropolitan area.

IV. Operations and Maintenance

A. Inspection of Completed Works - Sacramento River Flood Control Project:

The Reclamation Board is concerned about the long-term integrity of the Sacramento River Flood Control System. The project is an integral part of the State's flood control plan and protects over one million people and billions of dollars in property. Portions of the project facilities are now over 100 years old; most are at least 50 years old. A break in the project levee on the Yuba River flooded thousands of homes in February 1986, and other areas within the project were serious stressed. The Board believes it is time to consider the future of this project and the necessary measures required to sustain it as a viable, cost-effective, flood control system for the next 50 to 100 years.

The Reclamation Board supports the $900,000 for the Corps to prepare initial appraisal studies for the next 250 miles of levees in the Sacramento River Flood Control Project levee system.

U. S. Bureau of Reclamation Projects

A. Auburn-Folsom South Unit:

Auburn Dam, part of the Central Valley Project, was authorized in 1965. Auburn Dam and Reservoir is located on the North Fork of the American River adjacent to the City of Auburn. The population centers of Sacramento, North Sacramento, Arden, Brighton, Carmichael, Fair Oaks, Folsom, and Rancho Cordova lie partially within the natural American River floodplain. The present Folsom Dam and levee system do not provide adequate flood protection against a Standard Project Flood. The part of the metropolitan Sacramento area that would be flooded by the Standard Project Flood is estimated to have a population of about 160,000 people, according to the 1980 census. Auburn Dam and Reservoir will provide additional flood protection to the population centers of the metropolitan Sacramento area.

In February 1986, flood releases from Folsom Dam exceeded the design capacity of the project levees through the City of Sacramento. It was made very clear that additional flood control measures are needed to protect the metropolitan area. The Reclamation Board supports the $1,700,000 for this program and is working with all other State and Federal agencies to determine what alternative is feasible to correct the critical flood threat that exists in the Sacramento area.

STATEMENT OF GEORGE BARBER, CHAIRMAN, BOARD OF SUPERVISORS, SAN JOAQUIN COUNTY, CALIF.

Mr. HILL. Thank you very much, Ray.

Senator COCHRAN. Thank you and thank you for being here.

Mr. HILL. Our next witness is William Sousa, chairman of the board of San Joaquin County.

Mr. BARBER. Mr. Chairman, I am George Barber, senior member of the board of supervisors, San Joaquin County, representing Mr. Sousa, who I am accompanied by today, who stepped out of the room for a moment. We are moving along rather rapidly.

We would simply like to present our statement, enter it into the record, and indicate that we are supportive of the projects as itemized within that statement.

Thank you very much.

[The statement follows:]

STATEMENT OF WILLIAM SOUOSA, CHAIRMAN, BOARD OF SUPERVISORS, SAN JOAQUIN COUNTY, CALIF.

My name is William Sousa. I am Chairman of the Board of Supervisors of the County of San Joaquin, California.

The County of San Joaquin requests the following appropriations be made to the Corps of Engineers and the Bureau of Reclamation for the fiscal year between October 1, 1988, and September 30, 1989, for projects of concern to the County:

Corps of Engineers - Construction	
Lower San Joaquin River Clearing and Snagging	$ 1,500,000
San Francisco Bay to Stockton Ship Channel	$ 490,000
Corps of Engineers - Investigations	
American River	$ 600,000
Calaveras River	$ 450,000
Bureau of Reclamation - Project Facilities	
Auburn-Folsom South Unit	
Bureau of Reclamation - Investigations	
Delta Support Studies	$ 1,900,000

DETAILED COMMENTS

Corps of Engineers - Construction

Lower San Joaquin River Clearing and Snagging $ 1,500,000

Much of the Lower San Joaquin River channel upstream of Mossdale has become choked with sediment and debris as a result of upstream erosion and past floods. It is essential to continue this channel clearing program on the river system so that it can carry its design flood flows without endangering adjacent properties. We support the funds included in the President's budget for this essential work.

Corps of Engineers - Construction

San Francisco Bay to Stockton Ship Channel $ 490,000

San Francisco to Stockton Ship Channel has been deepened to 35 feet. To complete this project, bank protection and possible levee setback remain. We support the funds included in the President's budget for the bank protection and design of the levee work.

Corps of Engineers - Investigations

American River $ 600,000

The studies proposed by the Corps of Engineers concerning the American River do not adequately provide for developing a water supply from the American River. Water supplies which can be made available by Auburn Dam and Reservoir are essential to the resolution of the minimum flow problems in the Lower American River and to provide water for use in the Folsom South Canal service area.

The most important program of the Auburn-Folsom South Unit is the Folsom South Canal, which now ends 10 miles north of the San Joaquin County line. San Joaquin County, through its Flood Control and Water Conservation District, completed a comprehensive groundwater management study of the portion of the County that would be served water from the Canal. This study has provided the County with useful information on conjunctive use of groundwater in sustaining a presently developed agricultural area which is primarily in pasture, vineyard, row and orchard crops. The County has requested water from the American River under the Bureau of Reclamation American River Marketing Program. It is clear that all of the needs cannot be met without Auburn Reservoir.

The County believes that the studies of the American River should include water supply and that Bureau should now be making studies toward eventual extension of the Canal into the County to deliver supplemental water. In addition, no dam should be constructed that could not be enlarged to provide for water supply at a later date.

Calaveras River $ 450,000

During the February 1986 flooding the Calaveras River system came extremely close to failing. Because of the large urban community depending on this system it is essential that the Calaveras River be studied to determine what additional facilities are required to alleviate this problem. We request the appropriation of $450,000 to allow a reconnaissance study. If a project is defined for a feasibility study, the Stockton East Water District has committed to pay for the local share of such a study.

Bureau of Reclamation - Project Facilities

Auburn-Folsom South Unit

We would urge that funds be appropriated to the Bureau of Reclamation for the Folsom South Canal extension or modification thereof to serve the overdraft in San Joaquin County as we have described under the Corps of Engineers American River studies.

Bureau of Reclamation - Investigations

Delta Support Studies $ 1,900,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with the existing and potential problems. many of these programs involve cooperation with the State of California since both the State Water Project and the Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants.

The State expends large sums in studying the effects of the cross-Delta flows on water quality in the Delta and on export waters and in studying the effects of Project operations on the fishery resources and Delta channels. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta.

YUBA RIVER BASIN STUDY

STATEMENT OF CHARLES MATHEWS, DIRECTOR, YUBA COUNTY WATER AGENCY

Senator JOHNSTON [presiding]. Thank you.

Mr. HILL. Thank you; our next witness will be Charles Mathews, director of the Yuba County Water Agency.

Mr. MATHEWS. Thank you, Chairman, and Senator Cochran, we appreciate the opportunity to appear before you.

Don Wilson, engineer/administrator; J. E. McGill; and myself, Charles Mathews, director of the Yuba County Water Agency, ask that you support the request of the California Water Commission for a 1-year reconnaissance levee study of alternatives for flood control and related purposes in the Yuba River watershed by the Corps of Engineers, at a cost of $500,000.

The 1986 flood and the resulting failure of the Linda Levee flooded the homes and businesses of the communities of Linda and Olivehurst, resulting in a loss of over $100 million and the displacement of over 20,000 people. If you would look on the fourth page of our testimony, you will see a picture of the Linda flood.

We believe this funding will begin to assist us in finding a solution to the recurring problem. The Yuba County Water Agency has also budgeted $50,000 for this same purpose.

Thank you, Mr. Chairman, for letting us appear before you.

[The statement follows:]

STATEMENT OF CHARLES MATHEWS, DIRECTOR, YUBA COUNTY (CALIF.) WATER AGENCY

The Yuba River is the third largest tributary of the Sacramento River, exceeded in drainage area only by the Feather and American Rivers. The Yuba River Basin, which lies between the Feather and American Rivers, drains about 1,200 square miles of the Sierra Nevada Mountains. Runoff enters the Feather River at the cities of Marysville and Yuba City, which, with adjacent communities, are in flood plains protected by levees.

Summary of Request

Yuba County Water Agency requests an appropriation of $500,000 for a one-year reconnaissance investigation by the Corps of Engineers of the serious flood risk on the Yuba River. The principal purpose being the first step toward resolution of the long standing flooding problems of the area. Information developed by the Corps and others since the mid-1970s needs to be updated. Flood hydrology, benefits of avoiding damage to expanding urban developments, current cost-sharing criteria and potential water supply and instream benefits are principal matters needing current data for a sound solution. Action on the federally authorized (1966) flood control project has not been undertaken and that project, plus alternatives, urgently need to be reinvestigated.

NEED FOR FLOOD PROTECTION

The Marysville-Yuba City Area has grown to a population of 115,000 and is continuing to grow at a rate of about 2-1/2 % per year.

Since 1950 the Area has experienced six major floods, the latest in 1986. These floods affected large areas of residential, commercial and industrial development as well as agricultural lands. The 1955 flood displaced 40,000 people and resulted in 40 deaths. The 1950 Flood inundated 43,000 acres, the 1955 63,000 acres and the 1986 10,700 acres.

The Yuba is one of California's major rivers with an annual average unimpaired runoff of 2.4 million acre feet. The River is comprised of three principal forks and a number of lesser tributaries. The only flood control storage on the Yuba is New Bullards Bar Reservoir on the North Fork which provides 170,000 acre feet of flood space. The Middle and South Forks of the Yuba are virtually uncontrolled with regard to flood protection. The flood space provided is intended to protect the Marysville-Yuba City Area for up to a 60 year flood event. A reassessment of the hydrology may show the protection lower than thought as was the recent case with the Sacramento Area.

The Yuba River Watershed is steep and reacts quite rapidly to storms. The following tabulation comparing levels of flood protection for the American, Feather and Yuba Rivers reflects this in the peak one day flow figures.

River Basin	Area (sq. mi.)	Peak 1-day Flow1/ (cfs/sq.mi.)	Flood Control Storage (Acre-Feet)	Flood Control Storage AF/sq. mile)
Feather	2,900	742/	750,000	257
Yuba	1,200	150	170,000	142
American	1,900	110	400,000	2103/

1/ DWR Bulletin No. 1, "Water Resources of California," 1951. Higher peaks on all basins with recent hydrology.
2/ Influenced by Lake Almanor.
3/ Would be 474 acre-feet per square mile with 500,000 acre-feet of additional storage in Auburn Reservoir found needed by Corps of Engineers.

NEED FOR RECONNAISSANCE INVESTIGATION

Congress in 1966 authorized the Marysville Dam and Reservoir to provide flood protection for the Area as well as water conservation. The original site proved to be economically infeasible. The Project was reconsidered in 1976 for a different site upstream at Parks Bar, but was not able to show sufficient economic benefit at that time. The Corps of Engineers has recently completed a Flood Reconnaissance Study for the Sacramento Area which due to updated hydrology shows the Area only has 63 year event flood protection where it had been previously thought to have 100 year event protection. It is anticipated that a re-evaluation of the Yuba Area may show similar reductions in the expected levels of flood protection.

The Marysville-Yuba City Area is increasing in commercial and industrial development and is also experiencing an increase in new housing starts. This further increases the need for additional flood protection.

The requested Reconnaissance Study needs to proceed as rapidly as possible.

- Devastating floods can occur in any year. The longer the delay in constructing needed flood facilities, the greater the risk of loss of life and property.

- Construction and property costs continue to escalate.

- There is a movement by the California State Parks Department to acquire additional lands along the South Yuba. The California State Legislature has imposed a three year moratorium on State acquisition of additional land along the South Yuba to allow time for identifying viable flood projects. There is need to look at alternative projects based on current environmental assessment, economic conditions, increased population, development and value of developed property and changes of meteorologic and hydrologic criteria and data.

LOCAL PARTICIPATION

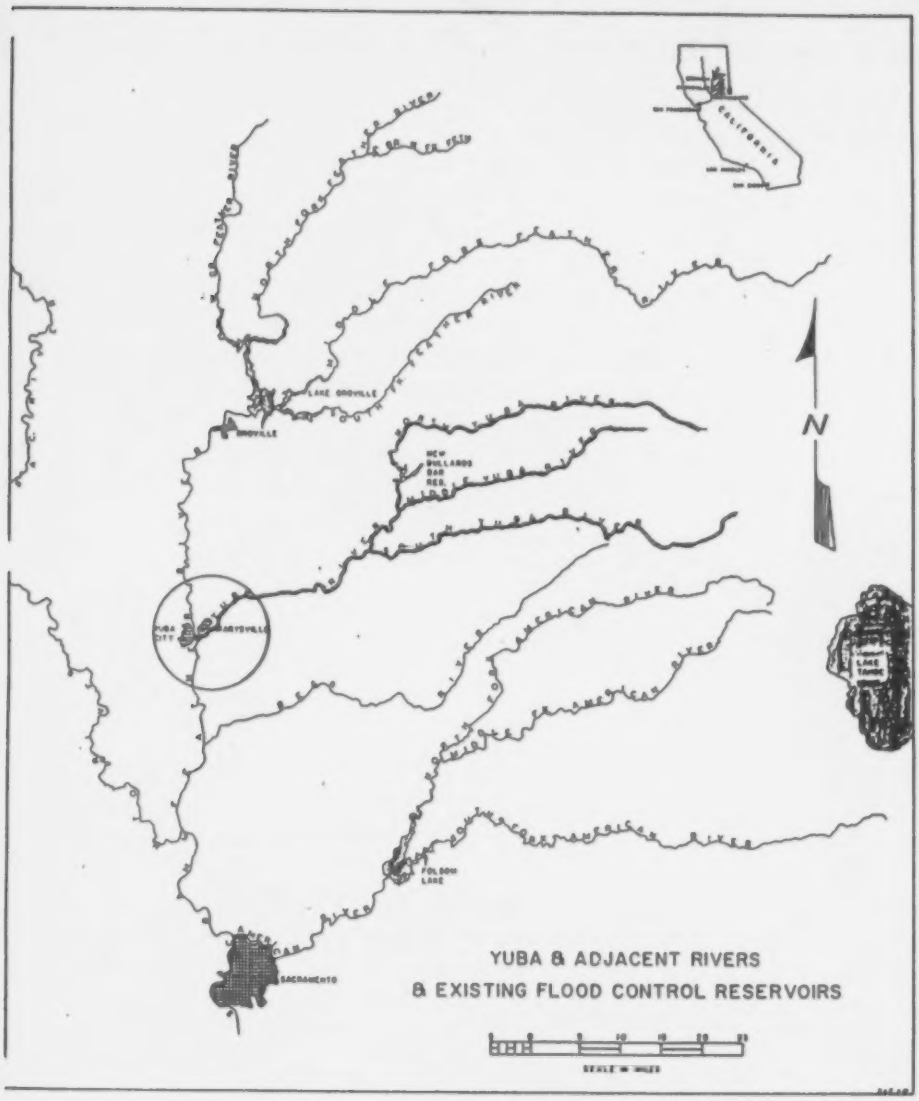
The Yuba County Water Agency understands that if the requested Reconnaissance Study identifies a project or projects that the Federal Government considers worth pursuing further, the next step would be a Feasibility Study which would require 50% local funding. It is additionally understood that local participation is necessary for the design and construction phases of a flood project.

In an effort to develop cooperation and coordination for achieving needed flood protection the "Tri-County Yuba River Committee" has been formed. The Committee is comprised of two county supervisors from Sutter and Nevada Counties and three Board Members from the Yuba County Water Agency.

CONCLUSION

The Marysville-Yuba City Area of California has since the days of the Gold Rush been the commercial hub of the region. The Area has on numerous occasions been ravaged by floods, resulting in substantial loss of life and property. Though some flood protection has been achieved through the construction of extensive levee systems and the Oroville Dam on the Feather and New Bullards Bar Dam on the North Yuba, the current facilities are not adequate to provide a reasonable level of protection to the Area. The Area is one of high unemployment. The lack of adequate flood protection in addition to placing existing developments at risk is restricting the development of potential additional industrial and commercial enterprises.

The requested $500,000 Federal appropriation for a Corps of Engineers Reconnaissance Flood Study of the Yuba River Basin is the first step toward providing reasonable levels of flood protection for an area of significant economic importance to the region.


California
N
YUBA & ADJACENT RIVERS
& EXISTING FLOOD CONTROL RESERVOIRS

STATEMENT OF RONALD COALE, VICE MAYOR, STOCKTON, CALIF.

Mr. HILL. Thank you very much.

Our next witness is Mr. Ronald Coale, vice mayor, city of Stockton.

Mr. COALE. Thank you, Mr. Chairman.

I am Vice Mayor Ronald Coale of the city of Stockton, Calif., authorized by the Stockton City Council to make the statement before your honorable body today.

The city of Stockton supports the recommendation of the California Water Commission on Corps appropriations for the American River investigation, the Stockton Ship Channel, the San Joaquin River clearing, the Sacramento-San Joaquin delta investigation and the Bureau's appropriation for the delta support studies.

The city particularly supports the Auburn-Folsom South appropriation and the Calaveres River survey for water supply and flood control purposes.

Thank you, again.

[The statement follows:]

STATEMENT OF VICE MAYOR RONALD COALE, STOCKTON, CALIF.

I am Vice Mayor Ronald Coale of the City of Stockton, California, authorized by the Stockton City Council to make this statement before your honorable body today.

The City of Stockton supports the Corps of Engineers and Bureau of Reclamation surveys, flood control and reclamation projects in the following amounts:

1.	American River Investigation	$ 600,000
2.	Deepening of the Stockton Ship Channel to 35 feet and realigning part of the Channel	1,700,000
3.	Lower San Joaquin River Clearing and Snagging	1,500,000
4.	Sacramento-San Joaquin Delta Investigation	230,000
5.	San Joaquin River Basin Survey - Calaveras River	450,000
6.	Auburn-Folsom South	1,200,000
7.	Delta Support Studies	1,900,000

FLOOD CONTROL -- CORPS OF ENGINEERS

AMERICAN RIVER INVESTIGATION----------$ 600,000

The President's budget provides $600,000 for the American River Investigation. The City believes this amount should be increased in order to include water supply considerations, particularly the extension of the Folsom South Canal in the study.

SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING--$1,700,000

The President's budget contains $1,700,000 for fish and wildlife enhancement after the completion of the dredging operations. The City supports the full appropriation.

LOWER SAN JOAQUIN RIVER CLEARING AND SNAGGING--------$1,500,000

Much of the Lower San Joaquin River channel upstream of Mossdale has become choked with sediment and debris as a result of upstream erosion and past floods. The City supports the President's budget to continue this channel clearing program on the river system so that it can carry its design flood flows without endangering adjacent properties.

SURVEY -- CORPS OF ENGINEERS

SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION----------$230,000

This study is to determine how the levees within the Sacramento-San Joaquin Delta can be rehabilitated to assure stability and provide seepage control. These levees provide protection to farm land and adjacent communities and to waterways which are used extensively for boating and recreation. Some of the levees are essential in limiting the tidal effects which cause salt water intrusion into the Delta channels. The City supports the funds included in the President's budget and recommended by the California Water Commission.

SAN JOAQUIN RIVER BASIN-CALAVERAS RIVER----------$450,000

Due to the heavy rainfall in 1986, it was apparent that flood control protection for the Stockton Metropolitan area needs to be bolstered. Flow data available showed that runoff below New Hogan Reservoir caused near flood conditions in 1986. The City endorses the California Water Commission's recommendation for a General Investigation Survey of the Calaveras River in the amount of $450,000.

BUREAU OF RECLAMATION

AUBURN-FOLSOM SOUTH UNIT----------$1,500,000

The President's budget contains $1,500,000 for work in fiscal year 1988/89. Water supplies which can be made available by the Auburn Dam and Reservoir are essential to resolve minimum flow problems in the Lower American River and to provide a water supply to the Folsom South Canal service area.

The most important program of the Auburn-South Unit is the Folsom South Canal, which now ends ten miles north of the San Joaquin County line. San Joaquin County completed a comprehensive groundwater management study of the portion of the County that would be served water from the Canal. This study has provided useful information on conjunctive use of groundwater in sustaining a developed agricultural area which is primarily in pasture, vineyard, row and orchard crops.

The Bureau should be conducting studies toward eventual extension of the Canal into the County to deliver supplemental water. This information, together with environmental impact statements relating to the service area, will be required for support of contracts for the supplemental water.

DELTA SUPPORT STUDIES----------$1,900,000

A wide variety of analyses and studies are required in the Sacramento-San Joaquin Delta in connection with the existing and potential problems. Many of these programs involve cooperation with the State of California since both the State Water Project and the Federal Central Valley Project use the Delta as a means of conveying water across the Delta to their export pumping plants.

The State expends large sums in studying the effects of the cross-Delta flows on water quality in the Delta and on export waters and in studying the effects of Project operations on the fishery resources and Delta channels. The Bureau should have comparable funds with which to discharge its responsibilities toward the Delta.

We support the California Water Commission's recommendation in the amount of $1,900,000 for delta-wide studies.

Resolution No. 88-0193

STOCKTON CITY COUNCIL

WHEREAS, on April 14, 1988, appropriate committees of the Congress of the United States will conduct hearings to consider Federal Appropriations for flood control, reclamation, and navigational projects and surveys for fiscal year 1988/89; and

WHEREAS, several projects and surveys to be considered at said Congressional hearings will be of benefit to the City of Stockton and its environs; and

WHEREAS, the expeditious construction of said projects and completion of said surveys is required to protect the health, welfare and safety of the residents of this area; now therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:

That the City of Stockton does hereby support the appropriation by the Congress of the United States of funds for fiscal year 1988/89 for the planning, continuation and completion of flood control, reclamation, and navigational projects and surveys; namely, AMERICAN RIVER INVESTIGATION, SAN FRANCISCO BAY TO STOCKTON SHIP CHANNEL DEEPENING, LOWER SAN JOAQUIN RIVER CLEARING AND SNAGGING, SACRAMENTO-SAN JOAQUIN DELTA INVESTIGATION, SAN JOAQUIN RIVER BASIN SURVEY-CALAVERAS RIVER, AUBURN-FOLSOM SOUTH AND DELTA SUPPORT STUDIES which affect the City of Stockton and its environs; be it

FURTHER RESOLVED, that the representative of the City of Stockton, Vice Mayor Ronald Coale, is authorized to appear before appropriate committees of the Congress of the United April 14, 1988 for the purpose of making presentations consistent with this resolution; be it

FURTHER RESOLVED, that the City Manager is hereby authorized and directed to send copies of this resolution to the

Honorable Alan Cranston, the Honorable Peter Wilson, the Honorable Norman Shumway and the Honorable Richard Lehman.

PASSED, APPROVED and ADOPTED this 4th day of April, 1988.

/s/ Barbara Fass

BARBARA FASS, Mayor
City of Stockton

ATTEST:

/s/ Frances Hong

FRANCES HONG, City Clerk
City of Stockton

San Francisco Bay Shoreline—Santa Clara and Southern Alameda Interim Study

STATEMENT OF JOE JUDGE, VICE CHAIRMAN, BOARD OF DIRECTORS, SANTA CLARA VALLEY WATER DISTRICT

Mr. Hill. Our next witness is Joe Judge, vice chairman, board of directors, Santa Clara Valley Water District.

Mr. Judge. Mr. Chairman, I am Joe Judge, vice chairman, board of directors, Santa Clara Valley Water District, Santa Clara County, Calif.

We have submitted five statements regarding the President's 1988–89 budget for work by the Corps of Engineers for those projects that are, in fact, included in the budget. I would like to just summarize the fifth, which is an augmentation.

The fifth is a statement urging support of an augmentation to the budget of $250,000 required for interim I preconstruction engineering and design and support for the amount of $220,000 for continuing investigation of interims II and III on the Corps of Engineers' San Francisco Bay shoreline project.

I respectfully request that these formal statements be accepted for the record. Thank you very much.

Senator Johnston. Without objection.

Thank you.

[The statements follow:]

STATEMENT OF JOE JUDGE, VICE CHAIRMAN, SANTA CLARA VALLEY WATER DISTRICT

THE STATEMENT URGES SUPPORT OF AN AUGMENTATION TO THE PRESIDENT'S 1988-89 BUDGET IN THE AMOUNT OF $250,000 FOR THE INTERIM I PRECONSTRUCTION ENGINEERING AND DESIGN AND SUPPORT OF THE $220,000 IN THE PRESIDENT'S BUDGET FOR INTERIMS II AND III, CORPS OF ENGINEERS' AUTHORIZED SURVEY OF SAN FRANCISCO BAY SHORELINE, CALIFORNIA.

BACKGROUND

The Bayfront areas of many of the San Francisco Bay counties have been adversely affected by land surface subsidence and, as a result, military installations, extensive lands, thousands of homes, business establishments and industries are subject to hazardous inundation from tides of the Bay. In Santa Clara County alone, approximately 40 square miles of land surface area is adversely affected. This area houses a number of federal installations including the U. S. Naval Air Station at Moffett Field and the National Aeronautics and Space Administration's Ames Research Facility. Industrial productivity could be adversely affected by tidal flooding since defense industries such as Lockheed, and many electronics, aeronautics and space firms are located in the area. The study is essential, also, in order to permit and ensure integration of any flooding solution with protection of wetlands and wildlife refuges.

The saltwater flooding problem is particularly acute in northern Santa Clara County where the threat of flooding is an annual concern. The potential for damage grows with each year. A combination of high tides, high winds, and moderate river flows has resulted in the overtopping of the inadequate, unsound, privately-owned levee system in this area. The community of Alviso is especially vulnerable to this flood threat as evidenced by disastrous inundation in 1982 and 1983. In 1985 the Santa Clara Valley Water District completed a $1.0 million construction project which strengthened and heightened the levee west of Alviso providing limited protection to the community.

STUDY SYNOPSIS

This Corps of Engineers' survey was authorized by the 1976 Omnibus Rivers and Harbors Bill to examine the tidal flooding from San Francisco Bay. Funds were first appropriated in FY 1979 and the study has been initiated by the San Francisco District office of the U. S. Corps of Engineers. The study is being conducted in three phases with Santa Clara County and Southern Alameda counties included in Interim I. The remaining bay area counties are included in Interim II and Interim III. The San Francisco District

held three broadly-based public meetings in January 1979 and also retained a consultant to define damage potentials and constraints and to assimilate the testimony requesting federal assistance given at those public hearings. Work in Fiscal Years 1983 consisted of topographic mapping, environmental and economic assessment of feasible actions. During Fiscal Year 84 and 85, the Corps continued refinement of studies and alternative analyses leading to a targeted draft study report in June 1988. A Final Report and EIS for Interim I is scheduled for July 1988.

Funds are needed to identify the hazards from tidal inundation with an objective, scientific study. Local agencies have neither the resources nor the geographical scope to deal with this problem which affects the entire San Francisco Bay Region. Local support is very strong.

FY 1988 FUNDING

The FY 1988 budget (continuing resolution) included $120,000 to complete the feasibility study for Interim I of this project (South Alameda and Santa Clara Counties) and a total of $600,000 for the entire study.

FY 1989 FUNDING

Funding in the amount of $250,000 for Preconstruction Engineering and Design (PED) for Interim I and $220,000 for Interim II and III is required in FY 1989. This continued funding totaling $470,000 is needed to assure timely completion of all shoreline work under this authority.

RECOMMENDATION

We therefore urge support of an augmentation to the President's Budget for 1989 in the amount of $250,000 for Interim I Preconstruction Engineering and Design, and support of the $220,000 in the President's Budget for Interims II and III.

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SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1988-89 BUDGET IN THE AMOUNT OF $611,000 TO COMPLETE DESIGN OF THE GUADALUPE RIVER PROJECT.

BACKGROUND

The Guadalupe River Project includes the major waterway through the highly

developed area of San Jose, California. Historically, the river has flooded the downtown areas of San Jose and Alviso beyond local capability to prevent. For example, the estimated damages from a one percent or 100-year flood, which would inundate the urban center of San Jose, is $71,800,000. It is estimated that a 50-year flood on this river would cause $43,500,000 worth of damage under existing conditions. The probability of such a flood occurring before implementation of flood prevention measures is quite high. A 50-year flood has an 18 percent chance of occurring during a 10-year period; a 100-year flood has about 10 percent chance of occurring during this same period. There is strong potential, therefore, that a damaging flood will occur before the problem can be resolved. The Guadalupe River had started to overflow its banks in April 1982 and January 1983 before the storm receded and avoided major damage. The Guadalupe River did overbank in February 1986 causing some damage to residences and business in the St. John and Pleasant Street area.

STUDY SYNOPSIS

In 1971, the community requested the Corps of Engineers to reactivate its earlier study. The Plan of Study was completed in 1973. The initial problem definition and alternative screening was completed in 1974. More detailed problem definition and alternative studies for the Guadalupe River were completed in 1978. The Stage 2 report was completed for the combined Guadalupe River, Coyote Creek and Baylands. The report at that time established the financial feasibility and federal interest in the Guadalupe River.

In an effort to accelerate the completion of this overall program, the local community through the Santa Clara Valley Water District has provided a substantial amount of technical and financial assistance since 1972. Special planning studies have been completed by the District for inclusion into the Corps' studies at a cost of over $430,000. The Guadalupe River project did receive authorization for construction under the Water Resources Development Act of 1986.

The severe flood problem and the ominous threat of future damages has forced the local community to initiate local projects within the Corps project reach and reaches downstream of the Corps limits. In excess of $15 million has been spent on the planning, design and construction of improvements to date.

FY 1988 FUNDING

The 1988 Budget (continuing resolution) included $625,000 to continue the Preconstruction Engineering and Design on the Guadalupe River.

NECESSARY FY 1989 FUNDING

Funding for the Guadalupe River project during 1989 in the amount of $611,000 for Preconstruction Engineering and Design (PE&D) is essential to complete required design in anticipation of a future construction start as scheduled.

RECOMMENDATION

Based upon the present high flood risk and potential damage from the Guadalupe River, it is urgently requested that the President's 1988-89 Budget be supported in the amount of $611,000, to complete design of the Guadalupe River Project.

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SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1988-89 BUDGET IN THE AMOUNT OF $2,470,000 TO FINALIZE CONSTRUCTION OBLIGATIONS FOR OF THE CORPS OF ENGINEERS FOR THE PAJARO RIVER: UVAS-CARNADERO PROJECT, SANTA CLARA COUNTY, CALIFORNIA.

BACKGROUND

The Pajaro River: Uvas-Carnadero Creek Project is located in Gilroy in the southern part of Santa Clara County, California. Congress originally authorized a levee project along Uvas Creek in 1944. Subsequently a more comprehensive effort to study the entire Pajaro River Basin was authorized by Congress in 1945. A specific report on the Uvas-Carnadero Creek portion, now being constructed, was completed in August 1975.

The project is a single levee on the northwest side of the creek to prevent flood flows from entering the southern part of the City of Gilroy. In February 1981, a public meeting was held by the Corps of Engineers in Gilroy. The final General Design Memorandum was completed in September 1985. The project has an approximate $10.6 million total project cost.

The January 1982 flood, though not major in magnitude, seriously threatened the City of Gilroy. Emergency actions were necessary to prevent failure of the existing levee. However, on February 17, 1986 floodwaters exceeded the banks of Uvas Creek and flowed into 200 homes and 20 businesses causing damages exceeding $5 million. Floodwaters were greater than three feet deep.

The project will protect about 600 existing homes, a new high school and commercial and industrial establishments from flooding. This area is that which the City of Gilroy and the County of Santa Clara have designated for development in lieu of other areas easterly of the present city which are subject to more severe flooding and in which agricultural operations are to be preserved. The project will alleviate potential damages of $19.8 million during a 1% flood event.

STUDY SYNOPSIS

Construction is under way. The first stage is the levee work upstream of Thomas Road with completion anticipated in late FY 88 or early FY 89.

PRIOR FUNDING

In 1983 funding was first provided in the amount of $190,000 to carry out planning and design of the project through FY 1985 and to prepare the project for construction. The first stage of construction was funded ($500,000) in FY 1987. In FY 1988 $1,865,000 was budgeted to complete construction.

FY 1989 FUNDING

The traditional non-federal costs on this project exceed 50% of the total project cost. In FY 1989 $2,470,000 is thus required to finalize construction obligations including reimbursement of designated local sponsor costs.

RECOMMENDATION

Community development has long contemplated completion of this critically-needed protection project. The amount of $2,470,000 in the President's 1988 Budget is required to fund remaining federal obligations in accordance with the cost-sharing agreement for the project.

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1988-89 BUDGET IN THE AMOUNT OF $800,000 TO CONTINUE DESIGN OF THE COYOTE CREEK PORTION OF THE GUADALUPE RIVER AND ADJACENT STREAMS PROJECT.

BACKGROUND

The Coyote and Berryessa Creeks investigation was authorized in 1941 under the Guadalupe River and Adjacent Streams Project. Coyote Creek is one of the major waterways that flow through the highly urbanized area of Santa Clara County, California. Berryessa Creek flows through the growing community of Milpitas. Historically, Coyote Creek has flooded the north San Jose community of Alviso beyond local capability to prevent. Damages on Coyote Creek would be $114 million during the 1% event to the north San Jose and Milpitas area. Berryessa Creek would cause $20 million damage to the homes and industry of Milpitas. The probability of a large flood occurring before implementation of flood prevention measures is quite high. A 50-year flood has an 18 percent chance of occurring during a 10-year period; a 100-year flood has about 10 percent chance of occurring during this same period. There is strong potential, therefore, that a damaging flood will occur before the problem can be resolved. In January 1983, floodwaters escaped from Berryessa Creek and caused damage to several homes and businesses. Coyote Creek has caused the greater damages amounting to several million dollars, overbanking in April 1982 and again in March 1983. Hundreds of people were forced to evacuate their homes where floodwater stood for many days.

STUDY SYNOPSIS

In 1971, the community requested the Corps of Engineers to reactivate its earlier Guadalupe River and Adjacent Streams Study which included Coyote Creek. The Plan of Study was completed in 1973. The initial problem definition and alternative screening was completed in 1974. More detailed problem definition and alternative studies were completed in 1978. The third phase, study of freshwater flooding in the Baylands, (which included the lower reaches on Coyote Creek) was completed in 1979. The Stage 2 report could not establish the financial feasibility and federal interest in the Coyote Creek. In light of severe flooding in 1982 and 1983, the Corps refocused its study on Coyote Creek to address the inadequate level of protection provided by unstable levees. Berryessa

Creek originally was a Section 205 study but was combined with Coyote Creek when the project cost exceeded the limits of that program.

In an effort to accelerate the completion of this overall program, the local community through the Santa Clara Valley Water District has provided a substantial amount of technical and financial assistance since 1972. Special planning studies have been completed by the District for inclusion into the Corps' studies. The Coyote/Berryessa Creek project received authorization for preconstruction planning, engineering and design under the Water Resources Development Act of 1986.

The severe flood problem and the ominous threat of future damages has forced the local community to initiate a local project on Coyote Creek in anticipation of future federal participation. Nearly $2.7 million has been spent on the planning, design and construction of improvements on Coyote Creek to date, which are planned for incorporation into the federal project.

FY 1988 FUNDING

The 1988 Budget (continuing resolution) included $150,000 to begin Preconstruction Engineering and Design on Coyote and Berryessa Creeks.

NECESSARY FY 1989 FUNDING

Funding for the Coyote/Berryessa Creek project during 1989 in the amount of $800,000 will be required to continue the Preconstruction Planning, Engineering and Design (PE&D).

RECOMMENDATION

Based upon the present high flood risk and potential damage from Coyote and Berryessa Creeks, it is urgently requested that the President's 1988-89 Budget be supported in the amount of $800,000 to continue design on Coyote Creek.

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S 1988-89 BUDGET IN THE AMOUNT OF $480,000 FOR INVESTIGATION OF THE UPPER GUADALUPE PORTION OF THE GUADALUPE RIVER AND ADJACENT STREAMS.

BACKGROUND

The Guadalupe River is one of the two major waterways that flow through the highly urbanized area of Santa Clara County, California. Historically, the river has flooded the central district of San Jose and areas south beyond local capability to prevent. For example, the estimated damages from a one percent or 100-year flood, which would inundate the urban center of San Jose, is $71,800,000. Damages in the densely residential area south of Highway 280 would exceed $50 million. The probability of a large flood occurring before implementation of flood prevention measures is quite high. A 50-year flood has an 18 percent chance of occurring during a 10-year period; a 100-year flood has about 10 percent chance of occurring during this same period. There is strong potential, therefore, that a damaging flood will occur before the problem can be resolved. The Guadalupe River near Alma Street had started to overflow its banks in February 1980 before the storm receded and avoided major damage. The Guadalupe River did overbank in March 1982 and again in January 1983 causing damage to several residences and businesses in the Alma Street and Willow Street area.

STUDY SYNOPSIS

In 1971, the community requested the Corps of Engineers to reactivate its earlier study. The Plan of Study was completed in 1973. The initial problem definition and alternative screening was completed in 1974. More detailed problem definition and alternative studies for the Guadalupe River were completed in 1978. The 1980 Stage 2 report could only establish the financial feasibility and federal interest in the Guadalupe River between Highway 880 and Highway 280. In light of flooding in 1982 and 1983, the local sponsors requested that the Corps reopen their study of the Guadalupe upstream of Highway 280.

NECESSARY FY 1989 FUNDING

Commencement of a feasibility investigation on the upper Guadalupe River during 1989 will require funding in the amount of $480,000.

RECOMMENDATION

Based upon the present high flood risk and potential damage from the Guadalupe River, it is urgently requested that the President's 1988-89 Budget be supported in the amount of $480,000 to commence the feasibility effort on the upper Guadalupe River.

STATEMENT OF JAMES J. LENIHAN, BOARD OF DIRECTORS, SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S FY 1988-89 BUDGET IN THE AMOUNT OF $500,000 FOR COMPLETION OF CONSTRUCTION BY THE BUREAU OF RECLAMATION OF THE SANTA CLARA AND SAN BENITO COUNTIES PHASES OF THE SAN FELIPE DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA, AND URGES THE BUREAU OF RECLAMATION TO ALLOCATE ADDITIONAL FUNDS TO COVER PROJECT COMPLETION AND MODIFICATIONS WHICH ARE NECESSARY FOR TRANSFER OF FACILITIES TO LOCAL DISTRICT OPERATION. THE STATEMENT FAVORS CONTINUED STUDY OF THE WATSONVILLE SUB-AREA.

BACKGROUND

Construction of the San Felipe Division of the Central Valley Project was authorized by Congress in 1967. Funds were first appropriated to initiate preconstruction planning in FY 1970 and to begin construction in FY 1975. The first construction contract was awarded in September, 1978.

The facilities which will provide water service to the Hollister and Santa Clara sub-areas were substantially complete in FY 1987.

FY 1988 FUNDING

The FY 1988 Budget (continuing resolution) included $7,000,000 to complete administration of contracts, property agreements and other project obligations of the Bureau of Reclamation.

NECESSARY FY 1989 FUNDING

Continued provision of reduced support during FY 1989 in the amount proposed by the President is essential to permit a transfer of the Division facilities by the Bureau to local agencies for operation and maintenance.

The President's amount of $500,000 will fund designated elements of work for transfer but will not complete construction of two Division features in the Hollister sub-area, namely San Justo Reservoir and the Hollister Conduit. Representatives of the Hollister sub-area are making a separate request for this additional funding. It is respectfully urged that this request be given favorable consideration, either as a budget augmentation or as Bureau allocations during the ensuing budget period.

Further, funds for study of engineering and economic feasibility of providing future water service to the Watsonville sub-area are likewise not included in the President's budget.

CONCLUSION

Based upon the need for full water service operation of the San Felipe Division of the Central Valley Project and the early and orderly transition of maintenance and operation responsibility for the Division to contracting local agencies, we urge your support of the proposed appropriation of $500,000 and of every measure shown necessary to prompt completion of construction of this important federal project.

MERCED COUNTY STREAMS, CALIFORNIA

STATEMENT OF DUB DAVENPORT, SUPERVISOR, MERCED COUNTY, CALIF.

Mr. HILL. Thank you very much.

Our next witness is Dub Davenport, supervisor, County of Merced.

Mr. DAVENPORT. Thank you, Mr. Chairman. We have submitted a statement detailing Merced streams group project.

We appreciate your support in the past and hope that you will appropriate $4 million for us to get some programs started that are very badly needed next year. Thank you, sir.

[The statement follows:]

STATEMENT OF WYATT DAVENPORT, SUPERVISOR, DISTRICT NO. 1, MERCED COUNTY (CALIF.) BOARD OF SUPERVISORS

My name is Wyatt Davenport, Supervisor of District Number One, Merced County Board of Supervisors, Merced County, California. I have been asked by my fellow Supervisors to travel here today and express to you our sincere gratitude for your past support for the Merced County Streams Project and request that your committee continue in this supportive tradition by recommending inclusion of $4,000,000 in the FY 88/89 budget. Although the County of Merced together with the State of California is the project local sponsor, we are joined by the City of Merced, the Merced and El Nido Irrigation Districts, and the Le Grand-Athlone Water District in its support.

The Merced County Streams Project is a modification and expansion of an earlier flood project constructed between 1948 and 1957. It has undergone considerable review and modification since first authorized as part of the Flood Control Act of 1970. Approximately $9,000,000 has been spent to date on planning and design by the Corps of Engineers. During the process non-essential components were first scaled back, then totally eliminated in an effort to maximize project cost effectiveness. As true partners, responsible for sharing in the cost of constructing and maintaining the project, we worked with the Corps to establish an economic balance between benefits and costs. In this manner millions of dollars of project features were removed in order to scale the project to fit the economic realities of the community.

Federal authorization for project construction was granted as part of the Supplemental Appropriations Act of 1985. This authorization limits construction to facilities on Canal (Castle Dam) and Black Rascal Creeks (Haystack Mountain Dam), enlargement of Bear Creek Dam and modification of levies and channels along approximately 33.4 miles of Fahrens, Black Rascal, Cottonwood, and Bear Creeks. When completed the project will provide flood protection worth approximately $8,021,000 per annum to 55,000 acres of urban and agricultural lands. Total project cost is approximately $90,710,000, of which $28,155,000, or roughly 31%, will be paid by the local beneficiaries, during construction.

When completed 60,000 residents of metropolitan Merced will live with the assurance of 125 year flood protection, while the lower rural area will receive twenty-five year protection. Castle Air Force Base, a major installation of the Strategic Air Command would also be benefited. Base flooding caused by

inadequate local storm run-off discharge capacity and flooding of access roads will be reduced if not eliminated. Partial protection to the Base is currently provided by diverting Base run-off into the canal system of the Merced Irrigation District. This practice has not only caused past damage to the District's water distribution system, but has resulted in transporting flood waters into a neighboring water shed, where it has added to and compounded flood problems. This practice must stop.

The rural area within the project flood plane is planted primarily to trees, vines, and row crops, and represents some of the finest irrigated agricultural land of California's San Joaquin Valley. The farmers of this area, which are predominately single family farmers, pride themselves on being self reliant, devoting less than 2% of its land to growing crops receiving a federal subsidy. In addition they successfully planned, constructed and operate their own irrigation water storage and distribution system without federal assistance.

Representatives of Merced County have stood before you many times in the past, seeking your support. In 1936, Congress first recognized the need for flood protection in eastern Merced County. Together, we have strived to provide this basic protection. Without your continued support, we would not have completed the arduous task of Phase I and Phase II planning. It is now time for us to take the next step, that of construction. In order for us to do this, we again need your support.

On March 4, 1988, the California Water Commission voted to recommend supporting a federal FY 88/89 budget request in the amount of $4,000,000 for the Merced County Streams Project. This coincides with the amount requested by the President in his FY 88/89 budget. We support the President and the California Water Commission and ask that $4,000,000 be placed in the U.S. Army Corps of Engineers Fiscal 88/89 projects budget for a construction start on the Merced County Streams Project.

Thank you,

STATEMENT OF JIM MARKARIAN, CHAIRMAN, BOARD OF DIRECTORS, FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

Mr. HILL. Our next witness is Jim Markarian, chairman of the board of directors, Fresno Metropolitan Flood Control District.

Mr. MARKARIAN. Thank you, Mr. Chairman. I am also authorized to speak for the Fresno Irrigation District, County of Fresno, and the cities of Fresno and Clovis.

We appreciate the committee's continuing support of the Redbank-Fancher Creeks flood control project and request appropriation of the $4.5 million allocated in the President's budget. The requested funds are necessary for the continuation of construction which began in fiscal year 1987.

I thank you and the committee, and ask that our complete presentation be part of the record.

[The statement follows:]

STATEMENT OF JIM MARKARIAN, CHAIRMAN, BOARD OF DIRECTORS, FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

My name is Jim Markarian and I am Chairman of the Board of Directors of the Fresno Metropolitan Flood Control District of Fresno County, California, the local sponsor for the Redbank-Fancher Creeks Flood Control Project. I am authorized to speak on behalf of the County of Fresno, the Cities of Fresno and Clovis, and the Fresno Irrigation District. In addition, the State of California has enacted legislation approving the project and authorizing State financial participation.

We respectfully request continuing project construction be retained in the FY 88-89 budget in amount not less than the $4,500,000 provided in the President's budget. This construction element will provide initial flood protection to important areas near Fresno Air Terminal and in southeast Fresno.

The Redbank-Fancher Creeks Project was initially identified in the Big Dry Creek project investigation of 1940 and the resulting Fresno County Streams project authorization. In 1956, the Congress specifically authorized investigation of a project modification relating to the Redbank, Fancher, and Big Dry Creeks stream system. Unfortunately, federal funds were not appropriated until the disasterous 1969 floods. The completed investigation proved the project to be both economically justified and environmentally sound.

The Redbank-Fancher Creeks Project is economically justified on the basis of flood damage prevention alone. Though other benefits accrue, they are not required to produce a positive benefit/cost ratio. The project will provide protection to 51,000 acres containing a population in excess of 120,000. The final benefit/cost ratio is estimated at 1.6:1 at an 8-5/8% interest rate, including CPE costs.

Estimated average annual flood damages exceed $14,000,000 and affect both urban and agricultural land. The project will also protect an open irrigation canal system which transverses 210,000 acres of the world's most productive agricultural lands, Fresno County's gross annual production continually exceeding 2.0 billion dollars. The project will control the historic flooding which has seen the stream and canal systems overflow an average of once every four years.

The investigation report was forwarded to the Congress as House Document 98-147, being subsequently authorized for construction through PL 99-662. The LCA has been executed, the local funding mechanisms put into place and the first local cost share payments already made to the Government. Because of the project's construction status, the requested appropriation is critical.

We appreciate the privilege of appearing before the Committee and the past support given the project. We urge your continued support and ask that our statement and the attached detailed presentation be made a part of the hearing record.

The people of the central county area of Fresno County, California are deeply appreciative of the opportunity to have the presentations of their representatives heard by the honored members of the Congress. While the Redbank-Fancher Creeks Flood Control Project is not large by some standards, it is critically important to the Fresno-Clovis metropolitan area which is the business center of the most productive agricultural county in the world, gross annual production continually exceeding 2.0 billion dollars.

This report, first submitted in May 1971, has been submitted annually to substantiate the continuing vital need for completion of the flood control works specified in the Redbank and Fancher Creeks project report.

AUTHORIZATION:

The Redbank-Fancher Creeks project is a modification of the existing Fresno County streams, California authorization, incorporating the enlargement of the Big Dry Creek Dam and the containment of the balance of the stream group.

The Congress, on June 13, 1956, authorized the Corps of Engineers to reinvestigate the stream group project, this following the major floods of 1955 and 1956. Unfortunately, funds were not provided and the Corps did not begin the investigation until the area had suffered its worst flooding in history during January and February 1969. The release of funds and the start of the investigation occurred in July 1970, some fourteen years after Congressional authorization.

During July 1980, the Board of Engineers of Rivers and Harbors forwarded to the Chief of the Corps of Engineers the completed project report and environmental impact report.

The report was forwarded to the Congress as House Document 98-147, bearing the date January 24, 1984. The project was authorized for construction pursuant to PL 99-662 and the LCA was executed with the local sponsor (the Fresno Metropolitan Flood Control District) on August 1, 1987.

PROJECT LOCATION AND NEED:
Redbank, Fancher, and Big Dry Creeks of the Fresno County Stream Group, their tributaries and related streams addressed by the project, are located on the western slope of the Sierra Nevada mountains. The watershed encompasses some one hundred seventy-five square miles and generates storm runoff which flows through the heart of the metropolitan area. The flows impact directly on the open irrigation canal system which transverses some 210,000 acres of the world's most productive agricultural land and 95,000 acres of a densely developed urban community with a population in excess of 400,000.

It is currently estimated that the floodplain to be protected by the proposed project includes 51,000 acres with a population in excess of 120,000 (1982) and a market value in excess of 2.4 billion dollars. Total estimated average annual flood damages exceed $14,000,000 and affect both urban and agricultural properties.

HISTORY OF FLOODING:
As a result of the uncontrolled nature of the subject stream group, flooding has occurred frequently. Floods of record occurred in March 1938, December 1955, January 1956, January 1969, February 1969, March 1978, and January 1983. In addition, available records indicate flooding of lesser severity occurred in 1914, 1915, 1916, 1937, 1958, 1965, 1972, 1977, and 1986 with the streams and irrigation canal system overtopping their banks on the average of once every four years.

Although the floods of March 1978, January 1983, and February 1986 were of a lesser magnitude than those of 1969, thousands of dollars in damages to private homes, public roads, irrigation facilities and hundreds of acres of prime agricultural lands were experienced. Such floods again demonstrated the urgent need for immediate construction of the Redbank-Fancher Creeks Project

LOCAL SUPPORT:
Following the floods of January and February 1969, the Fresno area was declared a federal disaster areas. With the realization millions of dollars in flood damage could have been prevented and that a recurrence of such floods would be even more devastating, a public hearing on the needed flood control works was held on February 28, 1969. Hundreds of citizens representing some seventy-five public and private organizations met and drafted resolutions to the U.S. Army Corps of Engineers and legislative representatives urging active pursuit of the Redbank-Fancher Creeks Flood Control Project. Subsequently, the County of Fresno, the Cities of Fresno and Clovis, the Fresno Metropolitan Flood Control District, and the Fresno Irrigation District, authorized direct work with the Corps of Engineers and the Congress to secure adequate flood protection for the Fresno-Clovis metropolitan area.

In an effort to ensure the availability of lands needed for the required flood control structures, the County of Fresno acting jointly with the Fresno Metropolitan Flood Control District did, in 1974, effect open-space and conservation zoning of approximately 500 acres. In addition, the Cities of Clovis and Fresno, the County of Fresno, and the Fresno Metropolitan Flood Control District, signed contracts providing advanced funding to acquire the necessary project lands.

Relatedly, the California Water Commission has historically supported and continues to support the project. In addition, the State Reclamation Board has submitted a supporting letter of intent for local assurances. Further, the California Legislature has passed and the Governor has signed legislation authorizing State support of and financial participation in the project.

At the local level, a broadly based Citizens Project Advisory Committee was created by the Flood Control District. The Committee and the sixteen community organizations and agencies it represented reviewed and confirmed the project's need and design. The Committee has also structured a financing plan to ensure the availability of the required local cost share and the equitable distribution of those costs.

ENVIRONMENTAL CONSIDERATIONS:
The federal project Environmental Impact Statement was finalized in July 1980 following a public hearing held in the project area by the Local Sponsor and the U.S. Army Corps of Engineers. Testimony submitted during the hearing indicated there were no areas of controversy associated with the project or its limited environmental impact. In summary, the testimony confirmed the accuracy of the Draft Environmental Impact Statement in identifying only limited impacts and the adequacy of the proposed mitigation measures.

In addition to the 1980 federal EIS, the Local Sponsor prepared a complete environmental impact report, dated July 1985, pursuant to the California Environmental Quality Act. That EIR and related subsequent reviews, including a supplemental environmental assessment support the previous findings, further indicating one project component will directly benefit the cleanup of a downstream agricultural chemical plant. Final construction design of the unit is being coordinated among state, local and federal interests to maximize those benefits. It is confirmed any adverse environmental impact which might be associated with the project would occur during the brief construction period. However, such impacts would be of a temporary nature and insignificant when compared with the permanent environmental and social benefits to be derived.

PROJECT FEASIBILITY AND FINANCING:

The completed project report, supplemented by additional engineering detail, substantiates the need for the project and identifies strong economic justification. The project costs and benefits, adjusted from the General Design Memorandum are as follows:

Total First Costs (GDM 1987)	$69,600,000	
Average Annual Costs (8-5/8%)		$6,230,000(*)
Total Average Annual Benefits:		
Flood Control	$ 9,206,100(*)	
Flood Proofing Cost Reduction	613,700(*)	
Total Average Annual Benefits		$9,819,800(*)
Benefit/Cost Ratio	1.6 to 1.0	

(*) Estimates based on 1987 Construction Cost Estimates

Noteworthy is the fact that the project is economically justified on the basis of flood damage reduction benefits alone. While other benefits are to be produced, they are not needed to produce a positive benefit/cost ratio. It should be noted that, while not included in the actual benefit calculations, the proposed project will create significant beneficial effects in the areas of water conservation, groundwater management, wildlife enhancement and recreation.

The distribution of the project costs, based on the new cost-sharing requirement, is as follows:

Federal Government (PL 99-662)	$52,200,000
State of California (SB 502)	12,180,000
Fresno Metropolitan Flood Control District (AB 2113) (Plus Annual O & M and Replacement)	5,220,000
Total Project Cost (1987)	$69,600,000

PROJECT COST SAVINGS:

It is significant to note that the Corps of Engineers and the local sponsor have focused efforts in maximizing project design and construction efficiency. These efforts have led to certain structural reductions and construction coordination which produced a near 30% reduction in estimated project costs. While each of the project units meets a separate benefit/cost test, each of the units is interdependent as to hydrological operation and construction and the savings noted above are not fully achievable without the integrated construction and operation of all project units.

PROJECT STATUS REVIEW:

Subsequent to the submission of the project report to the Congress as House Document 98-147 in January 1984, much has been accomplished. Congressional enactment of PL 99-662 effected final project construction authorization, inclusive of flood control, recreation and water conservation purposes. The LCA was executed in a formal ceremony on August 1, 1987 and the first construction expenditures were approved by the President and the Congress in FY '87.

In FY '88, the second year of construction expenditures (first year of structural activity) was effected. This second year activity produced immediate flood protection benefits to the Friant-Kern Canal of the Bureau of Reclamation's important Central

Valley Project. The President's FY '89 budget proposes third-year construction funding in the amount of $4,500,000. This work will provide initial flood protection benefits to important areas in the vicinity of Fresno Air Terminal and southeast Fresno.

In coordination with the Government's project work schedule, the Local Sponsor implemented the project funding mechanisms in 1987-88, accumulating the funds required pursuant to the cost-sharing requirements. The first local payments were made to the Government in 1987. Relatedly, land acquisitions required for all phases of the project are now in excess of 60% complete.

CONCLUSION: REQUEST FOR APPROPRIATION:
On June 13, 1987, thirty-one years had elapsed since Congress first authorized the proposed Redbank-Fancher Creeks Flood Control Project modification to the Fresno County Streams Project. The need for the project has been identified in a total of eight different studies and investigations performed at both the local and federal levels. The project feasibility investigation confirmes the project need and identifies strong economic justification for project construction. Further, the more advanced and detailed technical analysis associated with the completed General Design Memorandum has confirmed the project's need, economic strength, the previous recommendations of the Corps and the requests of the local community.

Because it is our belief that the Redbank-Fancher Creeks Flood Control Project has met all requirements for federal participation and meets all current standards of economic justification and environmental protection, we most respectfully urge favorable action by the Committee and the Congress in appropriating continued construction funding for the Redbank-Fancher Creeks Flood Control Project.

NAPA RIVER FLOOD CONTROL PROJECT

STATEMENT OF HAROLD MUSKOWITE, CHAIRMAN, NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Mr. HILL. Thank you very much, Jim.

Our next witness is Harold Muskowite, Napa County supervisor.

Mr. MUSKOWITE. Thank you, Mr. Chairman.

We have submitted statements and also a brochure showing the devastating effects of the 1986 flood with pictures and comments.

We urge you to support the $550,000 funding which is in the President's budget for the California Water Commission for fiscal year 1989, for the presentation of engineering and design for the United States Army Corps of Engineers on the Napa Flood Control project.

We thank you very much for your support.

[The statements follow:]

STATEMENT OF HAROLD MUSKOWITE, CHAIRMAN, NAPA COUNTY (CALIF.) FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SUMMARY

This statement is in support of renewed funding for the Corps of Engineers Napa River Flood Control Project located in Napa County, California. The local sponsoring agency requesting this funding is the Napa County Flood Control and Water Conservation District. The specific action requested of this Committee is support of a Federal budgetary appropriation of $550,000 for this project in Fiscal Year 1989. This amount is equal to the estimated Corps of Engineers expenditure capability, is included in the President's Budget for Fiscal Year 1989, and is the amount recommended by the California Water Commission for this project.

STATEMENT

This statement is to urge that the $550,000 funding included in the President's Budget and recommended by the California Water Commission for Fiscal Year 1989 for preconstruction engineering and design for the United States Army Corps of Engineers Napa River Flood Control Project be approved by your Committee.

The Napa River Flood Control Project was authorized by Congress in 1965 under PL 298. The project extends from Trancas Street, on the north edge of the City of Napa, south to Edgerly Island, a distance of about 11 miles.

The serious extent of such flooding is shown graphically on the attached Plate I. This shows the limits of the Corps design flood through the City of Napa without the project constructed.

As a result of previous Federal funding, a multi-purpose project had progressed through design in the mid 1970's. That design included open space and recreation elements. In about 1977, the Board of Supervisors requested the Corps to place the project in an inactive status.

Since experiencing the devastation caused by the flood of February 1986, the Board of Supervisors has determined to request that the Napa River Flood Control Project be reactivated. They are asking that the Corps of Engineers review not only the project previously developed, but also previously studied alternates and other alternates which may be practical to accomplish this much needed flood control. When the most practical and cost effective project possible has been defined, the Board will make every effort to provide the required local participation.

CONCLUSION

In conclusion, it is our goal that construction on a Napa River Flood Control Project, which is designed to eliminate serious flooding hazards along the Napa River and consequently to eliminate the losses and suffering such as those experienced in 1986, be undertaken as soon as possible.

We feel that the citizens of Napa County will be supportive of a cost effective flood control project and that defining such a project is imperative. For this reason, it is vital that the $550,000 above mentioned be provided in the coming Fy 1988-89 budget. We cannot afford to experience another storm like that of February 1986 without proper flood control.

We hope that the members of the Committee will recognize the concerns and fears of the people of Napa County and of this Board and enhance the economic and environmental conditions of the people residing within the project area by supporting the funding which we have requested.

STATEMENT OF ASSEMBLYWOMAN BEV HANSEN, EIGHTH DISTRICT, CALIFORNIA LEGISLATURE

I would like to convey to you my full support for an updated study concerning a Federal Flood Control Project on the Napa River.

It is my understanding that President Reagan has included in his 1988-89 budget an allocation of funds designed to accomplish necessary flood control project reviews such as on the Napa River. I would appreciate and urge your support for the allocation of such funds.

The devastating floods of 1986, as well as previous U.S. Army Corps of Engineers' studies, have proven that a Federal Flood Control Project on the Napa River is indeed warranted and needs urgent attention.

STATEMENT OF MAYOR CHARLES B. WHARFF OF YOUNTVILLE, CALIF.

About one year ago, Napa County Officials requested that funds be approved by Congress to fund a restudy of the County Flood Control Project by the Corps of Engineers.

As you are aware, the funding was lost in the adoption process of the 1988 Federal Budget.

We are informed that funds for the Flood Control Study have been included in the President's Budget for 1989.

Your help in obtaining approval of these funds by the Congress will be greatly appreciated.

SAN BERNARDINO VALLEY GROUND WATER PROJECT

PREPARED STATEMENT

Mr. HILL. Next is Andy Schlange who has filed his statement with the committee on the San Bernardino Valley ground water demonstration project.

[The statement follows:]

STATEMENT OF SANTA ANA (CALIF.) WATERSHED PROJECT AUTHORITY

The Santa Ana Watershed Project Authority (SAWPA) executed a contract for a General Investigation Program with the U.S. Bureau of Reclamation (USBR), entitled San Bernardino Valley Groundwater Project, on October 7, 1987. The project is expected to cover a period of three years with 50 percent of the funds appropriated by SAWPA and 50 percent matching funds from the U.S. Bureau of Investigation.

The study, which is extremely important to the implementation of water management concepts, which will result in significant water conservation, was funded by the Congress during Fiscal Year 1987 with an appropriation of $150,000. Unfortunately, the study was not funded in the President's budget for Fiscal Year 1988.

SAWPA will request its Congressional Delegation to make a special request for a continued appropriation for fiscal year 1989 budget year in the amount of $100,000 to continue this very vital work.

During the California Water Commission Hearings, week of March 4, 1988, the Water Commission did approve this matter for recommendation to the Congressional Delegation on behalf of SAWPA in the above-mentioned amount.

I plan to be in Washington D.C. April 11 - 14, 1988, when your Committee will be holding hearings on the appropriation bill, and I respectfully request the opportunity to appear before your Committee in support of this very vital water management project. I am enclosing a summary of the Study which I will describe briefly as part of my testimony at the hearing.

We at SAWPA sincerely appreciate your assistance in scheduling the opportunity to appear before your Committee to testify on behalf of the SAWPA Project, and as part of the California State Water Commission presentation.

PROJECT SUMMARY

Mr. Chairman, my name is Andrew Schlange, General Manager of the Santa Ana Watershed Project Authority (SAWPA). I appreciate the opportunity to submit SAWPA's request for funding of a planning project under the general investigation program of the Bureau of Reclamation.

San Bernardino Valley Groundwater Project
SAWPA is the local sponsor of the Bureau of Reclamation's San Bernardino Valley Groundwater Project. This important study could lead to a unified water management concept which could result in significant water conservation. The Santa Ana Watershed is currently losing thousands of acre-feet of water to the Ocean while at the same time importing supplemental water at a cost of $200 per acre foot. This investigation will put in place the framework for reducing the need for supplemental water by full use of local supplies. The fiscal year 1987 budget included an appropriation of $150,000; the fiscal year 1988 budget does not include funding for this study as part of the Bureau of Reclamations general investigations program. We respectfully request continued appropriations of $100,000 to match local funding of the same amount in fiscal year 1989.

SAN BERNARDINO VALLEY GROUNDWATER PROJECT

BACKGROUND
The Santa Ana River watershed comprises approximately 2,200 square miles in portions of San Bernardino, Riverside, Los Angeles and Orange Counties. It contains a population of about 3.5 million persons and is one of the fastest growing areas of the United States. Copious supplies of groundwater facilitated extensive agricultural development and urban growth. In recent decades, however, local water supplies were not sufficient to keep up with demand, and now water is being imported into the area to supplement local supply. In the future, import water is expected to cost up to $300 per acre foot. Consequently, making optimum use of the basin's local supply is imperative.

A key element of the basin's water supply is the groundwater basin under the San Bernardino Valley, both because of the amount of water it provides for overlying agricultural and municipal purposes, and because of its potential to capture and hold spring runoff if storage capacity is available there.

The Santa Ana Watershed Project Authority was established to provide oversight of the water supply and quality of the entire basin. It functions as a cooperative union of five member agencies who together cover the entire basin, namely: Chino Basin Municipal Water District; Orange County Water District; Western Municipal Water District; Eastern Municipal Water District, and San Bernardino Valley Municipal Water District.

Recognizing that the management of the local water resources in the basin are not at an optimum and that improved management could yield more of this costly commodity than at present, SAWPA has requested that Reclamation conduct a planning study which would develop an operating plan that facilitates more efficient use of the local resource.

Numerous other water agencies and flood control agencies in the basin are responsible for management of various portions or aspects of the basin water resource, and are thus also vitally interested in the prospects for improved management.

OBJECTIVES OF STUDY

The objective of the San Bernardino Valley Groundwater Project is to develop a program for the long-range management of the San Bernardino Valley Groundwater Basin and the upper Santa Ana River Watershed, in which it lies, to achieve the greatest practical yield of water occurring locally in the watershed. In order to do this, coordinating groundwater recharge is necessary, using local and imported water with extraction of water for use in a flexible plan that can cope with years of high runoff and low runoff and reasonably meet all the demands put on the groundwater basin. In other words, a plan should balance out the local water supply for wet and dry periods, which tend to occur in erratic cycles.

Based on past and present water supply conditions in the basin, this objective is anticipated to involve the construction of physical facilities to extract water from the San Bernardino Basin and convey it elsewhere for direct use or for storage.

The ultimate product of this process would be a planning report which would, after public review, be submitted to Congress for authorization of Federal funding for works that need to be constructed. Integrated into this report would be sufficient documentation to satisfy the reporting requirements of the National Environmental Policy Act. Perhaps even more importantly, the report would contain a plan of operation for the basin that would have the concurrence of involved water interests.

PROBLEMS TO BE ADDRESSED BY THE STUDY

The following problems will be addressed, individually or in combination, as part of the plan formulation process.

1. The watershed sporadically looses large quantities of water to the ocean during periods of high runoff.

2. High water table in the San Bernardino area is causing damage to public and private buildings and aggravates the risk of seismic disturbance in the event of an earthquake.

3. A technical "overdraft" situation exists in the San Bernardino Groundwater Basin despite a surplus of water in the lower-elevation portion of the basin. This stems from institutional constraint on remedies.

4. The groundwater basin in the Yucaipa area is overdrafted.

5. The Chino Basin has unused storage capacity for water, and is at the same time loosing water from its lower-elevation areas.

6. Institutional barriers prevent exchanges of water which would provide fuller utilization of the local supply.

7. Groundwater pollution is occurring in certain areas of the basin and is degrading water quality, preventing its use for municipal purposes and degrading water quality in the lower part of the basin.

8. The basin is not self-sufficient in water supply, but relies on supplemental import water. The import water supply may be insufficient to meet short term needs during critical shortage periods.

STUDY PHASES

The San Bernardino Valley Groundwater Project will involve three successive phases. Generally, each phase will involve narrowing the range of alternatives under consideration, and increasing degrees of detail.

The first phase of the study will be to make a preliminary evaluation of the project to determine whether a viable solution exists. This evaluation will involve scoping the range of alternatives to be considered, a preliminary shakeout of alternatives to determine likely candidates, and the evaluation of one or two of the best to demonstrate that a viable solution exists. At the end of this phase, an Internal Preliminary Finding Memorandum will be prepared to present the results of this phase and recommendations on proceeding with more detailed study. A detailed plan of work for the remainder of the study will also be prepared, building upon the experience gained in the preliminary phase.

The second phase will involve the formulation and evaluation of definite project alternatives, using the preliminary alternatives as a starting point. A preferred alternative will be further refined and ultimately submitted to Congress for consideration of construction authorization. Toward the end of this phase, when the alternatives have been formulated and evaluated and a preferred project plan has emerged, a Plan Formulation Working Document will be prepared to document the process alternative. Based on the environmental analysis to this point, and a public scoping meeting, a decision will be made during this phase as to whether an Environmental Statement is needed for the project, or whether a simpler environmental assessment will suffice.

The third phase will involve refinement of the preferred alternative to add all the details needed to make it complete and fully capable of implementation. During this phase the planning report and integrated environmental document will be prepared for official public distribution.

STUDY ACTIVITIES

The following are the major activities to be performed during this study.

Review of Existing Studies. The various planning studies that have been prepared in connection with the basin will be evaluated and desirable features will be used to prepare a preliminary array of alternatives.

Water Supply and Demand Projections. Projections of future water demand and supply in the basin need to be prepared and evaluated.

Groundwater Basin Analysis. The San Bernardino Groundwater Basin will be analyzed by means of available digital models. The various operating scenarios developed in connection with the various project alternatives would be analyzed both to help formulate the alternatives and to analyze their benefits. The groundwater management and use practices of numerous local water districts would need to be accounted for.

Santa Ana River Basin Analysis. The river basin would be analyzed using available digital models, and this operation coordinated with the analysis of groundwater basin analysis.

Water Rights Compilation. Water rights, adjudications and other agreements will be catalogued and abstracted in terms that permit their scrutiny in connection with the development and analysis of alternative management plans.

Water System Design and Costing. Water system features to move water from areas of high groundwater to other areas will be located and planning designs and cost estimates made.

Benefit Studies. The monetary benefits of the project will be estimated to determine the feasibility of the project.

Financial Analysis. A financial plan will be developed to show the amount of repayment required, and how funds for repayment would be generated locally.

Environmental Studies. Studies to determine the environmental impacts of the project will be completed. At present, the nature and scope of these potential impacts are not known. They will probably include some minor effects on wetlands, and the usual construction impacts.

The U.S. Fish and Wildlife Service will be asked to evaluate the effects the project will have on wildlife habitat, and to provide recommendations during plan formulation.

Social Analysis. This will determine the social impacts and effects that need to be considered in decision making and plan selection. The planning process is an alternative process in which alternatives are formulated and first subjected to a preliminary analysis, then refined and subjected to a more detailed analysis. Anywhere in the process changes may occur from suggestions or inconsistencies and generate additional alternatives to examine. In this framework, the activities cited above are done in increasing levels of detail as project plans gradually become more complete and refined.

GENERAL PRINCIPLES AND GUIDELINES

This will consist of formulating several meaningful alternative management plans and necessary project features. First, a plan or plans would be formulated to best use available water resources and serve local needs without regard to institutional constraints. Then institutional constraints would be overlaid to identify constraints that might be relaxed or changed to permit best use of local water resources. Finally, after a review of the results, several alternatives will be selected for evaluation and analysis.

General criteria for formulating alternatives are that: (1) Water originating in the basin be used in the basin; (2) Equity be achieved among basin water users, and (3) The plan must meet the tests of completeness, effectiveness, efficiency, and acceptability, as defined in Federal Principles and Guidelines for Planning Water Resources Projects.

This planning study and the formulation of a locally supported plan cannot be accomplished by Reclamation or any other agency alone. Reclamation will rely on a high degree of interaction and cooperation with local interests. At key times, personnel from SAWPA and its member agencies will work alongside Reclamation planners in the formulation and evaluation of alternatives.

In accord with Federal guidelines for planning, the public will be kept informed of study activities and comments and input on various issues will be sought for the study. A public meeting will need to be conducted to scope the environmental issues to be dealt with in the study, in order to comply with NEPA.

BUDGET

In-Kind Services: The local contribution to the San Bernardino Groundwater Project will consist partly of in-kind services performed or procured by SAWPA, its constituent agencies, or other local entities. Such in-kind services will include, but not be limited to, the following: (1) Compiling and abstracting water rights and related local legal issues; (2) Adaptations existing water supply operation models for use in this study, and providing them for use in the study; (3) Providing the services of various technical people from the staffs of local water agencies to work closely with Reclamation during various phases of the study; (4) Providing the services of outside experts in various phases of water management for participation with Reclamation planning activities as needed to assure a quality product; (5) Analyzing water quality aspects of project alternatives; (6) Making local arrangements for public meetings, and (7) Printing various public information and technical documents for use during the study.

SAN FELIPE DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA

STATEMENT OF JAMES LENIHAN, DIRECTOR, SANTA CLARA VALLEY WATER DISTRICT

Mr. HILL. Next, we will have Jim Lenihan, director of Santa Clara Valley Water District and one of our commissioners.

Mr. LENIHAN. Mr. Chairman, I am James J. Lenihan, director of the Santa Clara Water District in Santa Clara County, Calif. I am submitting a statement supporting the President's budget request in the amount of $500,000 for completion of construction by the Bureau of Reclamation of the San Felipe Division of the Central Valley Project.

This amount would fund certain elements of work, but will not complete work on San Justo Reservoir and the Hollister conduit or fund further study of the service to the Watsonville subarea.

We respectfully request that these additional needs be given favorable consideration, either as a budget augmentation or as a Bureau allocation during the ensuing year.

We are also aware of the inadequate budgetary provision for essential maintenance and operation of the Central Valley Project. We strongly support the California Water Commission and others who are testifying to the additional need for $8.6 million for this purpose.

Thank you, Mr. Chairman, for this opportunity to speak and present our statement.

[The statement follows:]

STATEMENT OF JAMES J. LENIHAN, BOARD OF DIRECTORS, SANTA CLARA VALLEY WATER DISTRICT

SUMMARY

THE STATEMENT SUPPORTS THE PRESIDENT'S FY 1988-89 BUDGET IN THE AMOUNT OF $500,000 FOR COMPLETION OF CONSTRUCTION BY THE BUREAU OF RECLAMATION OF THE SANTA CLARA AND SAN BENITO COUNTIES PHASES OF THE SAN FELIPE DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA, AND URGES THE BUREAU OF RECLAMATION TO ALLOCATE ADDITIONAL FUNDS TO COVER PROJECT COMPLETION AND MODIFICATIONS WHICH ARE NECESSARY FOR TRANSFER OF FACILITIES TO LOCAL DISTRICT OPERATION. THE STATEMENT FAVORS CONTINUED STUDY OF THE WATSONVILLE SUB-AREA.

BACKGROUND

Construction of the San Felipe Division of the Central Valley Project was authorized by Congress in 1967. Funds were first appropriated to initiate preconstruction planning in FY 1970 and to begin construction in FY 1975. The first construction contract was awarded in September, 1978.

The facilities which will provide water service to the Hollister and Santa Clara sub-areas were substantially complete in FY 1987.

FY 1988 FUNDING

The FY 1988 Budget (continuing resolution) included $7,000,000 to complete administration of contracts, property agreements and other project obligations of the Bureau of Reclamation.

NECESSARY FY 1989 FUNDING

Continued provision of reduced support during FY 1989 in the amount proposed by the President is essential to permit a transfer of the Division facilities by the Bureau to local agencies for operation and maintenance.

The President's amount of $500,000 will fund designated elements of work for transfer but will not complete construction of two Division features Conduit.

Representatives of the Hollister sub-area are making a separate request for this additional funding. It is respectfully urged that this request be given favorable consideration, either as a budget augmentation or as Bureau allocations during the ensuing budget period.

Further, funds for study of engineering and economic feasibility of providing future water service to the Watsonville sub-area are likewise not included in the President's budget.

CONCLUSION

Based upon the need for full water service operation of the San Felipe Division of the Central Valley Project and the early and orderly transition of maintenance and operation responsibility for the Division to contracting local agencies, we urge your support of the proposed appropriation of $500,000 and of every measure shown necessary to prompt completion of construction of this important federal project.

STATEMENT OF WILLIAM RUPERT, MANAGER, SAN BENITO WATER CONSERVATION AND FLOOD CONTROL DISTRICT

Mr. HILL. Our next witness is William Rupert, manager of San Benito Water Conservation Flood Control District.

Mr. RUPERT. Thank you, Mr. Chairman.

My name is Bill Rupert, manager of San Benito County Water District. Our project, which is the San Felipe Division of the Central Valley Project, is in need of an additional $940,000 to complete the facilities.

As the information you have before you indicates, there remain a number of very important items yet to be finalized, all on Hollister conduit and outlet works. Without this additional funding our system will be lacking a corrosion control system, several safety features, and flow control valves that do not permit us to operate this system as it was intended and are a maintenance problem.

We respectfully request your support for the additional $940,000 appropriation and thank you for the time you have given me to present this testimony.

[The statement follows:]

STATEMENT OF WILLIAM RUPERT, DISTRICT MANAGER, SAN BENITO COUNTY (CALIF.) WATER CONSERVATION AND FLOOD CONTROL DISTRICT

The San Benito County Water Conservation and Flood Control District, located in Hollister, California, is a part of the Central Valley Project known as the San Felipe Division.

The President's 1988-89 Budget appropriates only $500,000 for the completion of San Felipe Division facilities. This Division is made up of two currently operating Districts, San Benito County Water District and Santa Clara Valley Water District. A third entity of the Division is the Pajaro Valley Water Management Agency, who have yet to construct their facilities.

Of the $500,000, only $100,000 is earmarked for the completion of San Benito County's - San Justo Reservoir. We believe this amount will be sufficient to finalize the Reservoir portion of our project.

Our problem, however, is that an additional $940,000 is needed to complete a number of Transfer Stipulations (deficiencies) and a recently discovered latent defect which the Bureau of Reclamation has agreed and is obligated to rectify.

The items in need of attention are on the Hollister Conduit and Outlet Works portion of our project. The Conduit is basically a 60" cement lined steel pipe which is subject to extensive corrosion under certain conditions. Although it was not originally known if corrosion protection would be needed on our system, the Bureau has determined that unacceptable levels of corrosion are taking place. In order to protect the integrity of the Conduit they have specified a system known as Cathodic Protection. Although the cost is $600,000, it is known to be a highly efficient and economical means of corrosion control.

Another item being designed by the Bureau's Denver office to protect our distribution system is a Trashscreen for the Outlet Works. This screen would prevent the introduction of possibly harmful objects that could block the pipelines or clog flow valves causing the pipeline to rupture. The cost of the Trashscreen is $26,000.

It has also been determined that a number of safety related items should be installed. One being an emergency evacuation system for our Gate Chamber. This structure is 125' deep and requires weekly inspections. If a person were to become disabled or injured we currently have no means of removing him. The cost to install this system is $25,500.

The second safety item is a removable railing to prohibit a person from falling into an opening in the Valve House floor. This opening provides access to a ladder leading to the main 60" Hollister Conduit. This cost is $12,700.

The last item noted as a Transfer Stipulation is the correction of excessive vibrations in the Pacheco Bifurcation Structure and two Flow Control Structure bypass lines. When it becomes necessary to recharge the Conduit, it must be done with smaller bypass lines. Using these lines has caused vibrations that could potentially result in structural damage and flooding of the structures. A remedy for this situation is said to cost $19,000.

The latent defect I mentioned involves two - 14" and two - 36" Flow Control Valves. These valves were designed to modulate flows through two Flow Control Structures within the Hollister Conduit. After many months of continual problems with these valves, the Bureau has determined that their original design and valve are not suitable for the application. They are currently working on an alternative valve and estimate the cost to be $250,000.

In summary, the costs are as follows:

Cathodic Protection	$600,000
Trashscreen	$26,000
Emergency Evacuation	$25,500
Safety Railing	$12,700
Bypass Vibrations	$19,000
Flow Control Valves	$250,000
Additional funding needed	$933,200 (call $940,000)

We trust you will agree and support the funding to protect the structural integrity of our system and the safety of our workforce.

If I can provide you with any further information or documentation, kindly contact me.

STATEMENT OF CRAIG FRENCH, GENERAL MANAGER, PAJARO VALLEY WATER MANAGEMENT AGENCY

Mr. HILL. Thank you very much.

Our next witness, Craig French, general manager, Pajaro Valley Water Management Agency.

Mr. FRENCH. Mr. Chairman, I represent the Watsonville subarea of the San Felipe project which has been referred to in testimony. We are here requesting a supplemental amount to complete the feasibility study that will allow for the San Felipe Division water to be delivered to our area.

We respectfully request this supplemental amount to allow for this completion of the feasibility study. Thank you.

[The statement follows:]

STATEMENT OF CRAIG FRENCH, GENERAL MANAGER, PAJARO VALLEY WATER MANAGEMENT AGENCY

The President's FY 1988-89 Budget for Water and Flood Control Programs in California has eliminated the $300,000 funding that would complete the feasibility study for the Watsonville unit of the San Felipe Division of the Central Valley Water Project.

The Pajaro Valley Water Management Agency (Agency), representing the Watsonville Service Area of the San Felipe Division, is currently working with the Bureau of Reclamation on a cost share basis to complete the feasibility study in order to negotiate a contract for the purchase of 19,900 acre feet of Central Valley Project Water. Delivery of water to the Agency would complete the final phase of the San Felipe Division Project.

The Watsonville Service Area was included in the original federal authorization for the San Felipe Division of the Central Valley project.

The federal FY 1987-88 budget included approximately $100,00 to begin feasibility studies, the Bureau of Reclamation programed $300,000 for FY 1988-89 to continue study, however in December 1987, the Office of Management & Budget (OMB) excluded funding for the Watsonville subarea for FY 1988-89.

The Agency requests the Committee on Appropriations to restore the $300,000 to the Bureau of Reclamation Budget for the San Felipe Division so that the study which began in FY 1987-88 can continue to completion in 1989.

Background

The Pajaro Valley Water Management Agency (Agency) serves the Pajaro Valley which includes portions of three counties. The boundaries of the district also represent one of the three originally authorized service areas of the San Felipe Division of the Central Valley Water Project.

Before the formation of the Agency, the Watsonville Service Area did not have the representation of a single governing entity that could pursue an immediate contract with the Bureau of Reclamation for the water authorized to the area. In recognition of this, then Regional Director of the Bureau of Reclamation, B. E. Martin, by letter dated December 1975, agreed to reserve the 19,900 acre feet allocated for the Watsonville subarea until the year 1990. The reservation on this water stipulated that water reserved for the Division which is not under contract by the year 1990 will be considered available on a permanent basis for other beneficial use in the Central Valley Service Area.

With the formation of the Agency in November, 1984, the Watsonville Service Area had, for the first time, the governing authority to pursue the 19,900 acre feet of water available through the San Felipe Division.

In 1987, the Board of Directors of the Pajaro Valley Water Management Agency submitted a Resolution of Intent to the Bureau of Reclamation to contract for this supply of water.

With that formal expression by the Agency, the Bureau of Reclamation and the Agency agreed to a cost share of studies

designed to define the feasibility of contracting for this water. Representing the Agency's portion of the cost sharing, the Board obligated approximately $400,000 and the Agency has initiated groundwater monitoring studies, and the development of a master water management program, which will generate information for this feasibility report. The Bureau of Reclamation, utilizing the FY 1987-88 funds for the Watsonville subarea, has also begun its work on these studies and has the capability to continue with these studies in 1989. Together we are currently working to produce the Feasibility Report on San Felipe water by 1990.

The Problem

Approximately $100,000 for the Watsonville Service Area was included in the federal FY 1987-88 budget to prepare feasibility studies. The Bureau of Reclamation programed $300,000 for FY 1988-89 to continue these studies. In December 1987, the Office of Management and Budget (OMB) excluded funding for the Watsonville unit for FY 1988-89 with the observation that it is an "uneconomical unit". Surprisingly, this determination was made without the benefit of the economic cost/benefit analysis of the feasibility study or a recognition of the water needs of the Agency and the important role the San Felipe project water can contribute toward resolving the seawater intrusion and overdraft problems of the area.

The loss of funding for 1989 will not allow the Bureau of Reclamation and the Agency to complete the Feasibility Report which provide the information necessary for the parties to negotiate a contract for the water. This, in turn, jeopardizes the current reservation of the 19,900 acre feet that is due to expire in 1990.

The loss of funding is of serious consequence to the Agency.

The San Felipe Division Report prepared back in 1966 identifies the problem of overdraft and seawater intrusion into the Pajaro Valley groundwater basin. The Agency was formed to work towards the objectives of reducing long term overdraft and seawater intrusion , and provide an adequate supply of water to maintain the strong agricultural economy of the area. The San Felipe Division water provides the means by which these goals can be achieved.

Facilities of the San Felipe Division which have already been constructed to serve the other two service areas of Santa Clara and San Benito Counties were designed and constructed in anticipation of the Watsonville conduit. The main conveyance pipe is sized to carry the additional capacity to serve the Watsonville Service Area, in fact a "turn out" is installed in the main line at the point where the line branches to Watsonville.

Given the facts that the original purpose of San Felipe was in part to serve the Watsonville area, that facilities are in place to carry the water, that the Agency was formed to develop the solutions to water supply, and that studies are underway with the Bureau of Reclamation that could lead to a contract for delivery of San Felipe water to the Pajaro Valley, it seems justified that the feasibility studies should continue so that soon there can be a completion to the final phase of the San Felipe Division Project.

The Pajaro Valley Water Management Agency appeared before the California Water Commission at their meeting of April 1, 1988 requesting their support for the inclusion of the $300,00 funding in the San Felipe budget. The Water Commission unanimously agreed to this request and has included this project as part of the final list of projects recommended for funding.

The Pajaro Valley Water Management Agency respectfully requests of the Committee on Appropriations, that the $300,000 necessary to prepare the feasibility studies for delivery of water to the Watsonville area be included within the San Felipe Division item of the Bureau of Reclamation budget.

Thank you.

UNITED WATER CONSERVATION DISTRICT LOAN

PREPARED STATEMENTS FOR THE RECORD

Mr. HILL. John Flynn, supervisor of the County of Ventura, and Lynn Maulhardt have filed statements concerning the United Water Conservation District loan which I ask be included at this point.

Senator JOHNSTON. Without objection, so ordered.

[The statements follow:]

STATEMENT OF JOHN K. FLYNN, CHAIRMAN, VENTURA COUNTY (CALIF.) BOARD OF SUPERVISORS

Project: United Water Conservation District, Ventura, California

Action Requested: Inclusion of $11,308,000 in the Bureau of Reclamation's Federal Budget to be Loaned to the United Water Conservation District for Completion of the Freeman Diversion Project

My name is John K. Flynn. As Chairman of the Ventura County Board of Supervisors, I represent the County of Ventura and the Ventura County Flood Control District.

I am appearing today to urge your inclusion of $11,308,000 in the FY 89 Energy and Water Development Appropriations Bill for the United Water Conservation District to continue construction of the Freeman Diversion project on the Santa Clara River in Ventura County, California.

Seawater intrusion poses a serious threat to continued agricultural production in a large portion of Ventura County. The Oxnard Plain, which has been farmed since the turn of the century, depends heavily on ground water as the source of water for irrigation. Heavy use of irrigation wells has caused ground water levels to decline which, in turn, has allowed salt water from the adjacent Pacific Ocean to intrude in excess of 20 square miles of the upper aquifer under the Oxnard Plain. The immediate effect of this underflow is an inability to continue the use of wells for a water supply which, in turn, has affected the urban and agricultural communities supplied thereby.

In recognition of this problem, the Board of Supervisors of Ventura County, the United Water Conservation District, and the State of California have developed a project to increase

utilization of an alternate water supply, the Santa Clara River, and to decrease pumping of water from the affected aquifer. Ordinances are in effect that prohibit further pumping from the aquifer and pipelines, terminal reservoirs, and new wells have been constructed to provide supplemental water to the area. Local and state expenditures to date approximate $15 million.

The keystone of this project is the Freeman Diversion Structure, a concrete stabilizer to be constructed in the Santa Clara River, that will allow increased amounts of water to be diverted from the river to provide users an alternative water supply through the pipelines and to recharge the ground water basin to halt and reverse the intrusion of salt water under the Oxnard Plain.

Your committee graciously included appropriations of $570,000 in the FY 87 supplemental bill for design and $5,500,000 in the FY 88 bill for construction of canal and desilting facilities. Now, $11,308,000 is needed for FY 89 to build the diversion structure.

We recognize the fiscal constraints your committee must deal with this year. Therefore, if it is not possible to fund construction of the entire dam in FY 89, we are willing to change our schedule and make the required adjustments to phase construction over two years. The first year would require excavating and pouring the foundation back up to riverbed grade in a manner that could sustain winter flood flows. Then the second year, the superstructure of the dam would be completed. To accomplish a two-year construction program, a minimum of $6,000,000 would be needed for FY 89 to build the dam foundation.

I urge you to support the continuation of this project, and to include $11,308,000 in the FY 89 appropriations bill, or if necessary, $6,000,000 to complete the project in two years.

Thank you for allowing me to present this Statement.

STATEMENT OF LYNN E. MAULHARDT, PRESIDENT, UNITED WATER CONSERVATION DISTRICT

Project: Freeman Diversion Improvement Project

Request: Provision for $11,308,000 of Appropriation in the Bureau of Reclamation's FY 1989 Federal Budget.

Purpose: To provide funding, under a PL 84-984 Small Reclamation Projects Act Loan, for use in construction of Phase II, the major in-river component of the project, for FY 1989.

My name is Lynn E. Maulhardt. I am President of the United Water Conservation District Board of Directors.

I am here to request that you give every possible consideration to the inclusion of $11,308,000 in the FY 1989 Federal Budget to provide urgently needed funding for use in construction of the major in-river component of the Freeman Diversion Improvement Project.

Under a Joint Powers Agreement, the United District and the County of Ventura are cooperatively engaged in addressing the very serious Seawater Intrusion problem under the lands of our Coastal Plain. In excess of $15 million of local funding has already been expended on construction of the initial elements of a comprehensive plan and program to resolve the intrusion problem. Currently, we are preparing to construct Phase I of

the Freeman Diversion Improvement Project, as shown on the appended General Site Plan, with $5.5 million appropriated for FY 1988. Phase II of the Freeman Project, as also shown on the Site Plan, is scheduled for construction in FY 1989, for which we are requesting the $11.3 million of appropriation.

It is recognized that our budget request is for a very substantial amount of appropriation. However, resolving the problem of seawater intrusion is of extreme urgency, and it is imperative that our schedule for project completion be maintained. To extend it for an additional year would have several adverse impacts, including the following:

a. Increased construction costs resulting from project shutdown and start-up, involving duplication of contractor mobilization. Also, the added costs of rehandling excavated materials;

b. Unfavorable construction contract bids;

c. Further intrusion of seawater, which is devastating to our invaluable aquifer resources;

d. Increased costs, due to inflation; and

e. Increased environmental impacts resulting from an extended construction period.

If budget constraints are such as to force a reduced allocation, not less than $6.0 million would be required for FY 1989. However, the potential penalties could be so significant as to jeopardize the successful completion of the project.

Also appended is a Project Summary which provides an abstract tabulation of pertinent information and data relevant to the problem and the project. Your further review of this very serious problem of Seawater Intrusion and consideration for the urgency of our funding needs is respectfully requested.

Thank you for the opportunity of appearing before you today to request your support for assistance in this critically important matter.

PROJECT SUMMARY

PROJECT TITLE. FREEMAN DIVERSION IMPROVEMENT PROJECT

LOAN APPLICANT. United Water Conservation District of Ventura County, California

PROBLEM AND LOCATION. Seawater Intrusion on the Oxnard Coastal Plain, Ventura County, California, acknowledged to be by far the most severe problem of its kind in the State.

PROJECT PURPOSE. To increase diversions of Santa Clara River waters for use in controlling the advance of seawater intrusion into the underground aquifers of the Oxnard Plain.

PROJECT AREA STATISTICS:

Urban Area	30,050 Acres
Irrigated Agriculture	39,150 Acres
Total Area	69,200 Acres
Total Population	212,000
Annual Value of Agricultural Crops - 1987	$301,000,000

ESTIMATED COST AND FINANCING PLAN.

Total Project Costs:	$19,556,000
Financing: Federal loan, under the Small Reclamation Projects Act, PL 84-984, as amended.	
Total Appropriation Requirement:	$18,730,000

APPROPRIATION REQUEST FOR FY 1988. The amount of $11,308,000 is requested for appropriation in FY 1989 to provide funding for construction of Phase II, the major in-river component of the project.

URGENCY FOR RESOLVING PROBLEM. Seawater has already intruded into the freshwater aquifers underlying 25% of the Oxnard Coastal Plain. Its further advance must be halted without delay, which is vital to preserving and maintaining the economy of the entire area.

April 5, 1988

STATEMENT OF DONALD DODGE, DEPUTY DIRECTOR OF PUBLIC WORKS, SACRAMENTO, CALIF.

Mr. HILL. Our next witness is Donald Dodge, Deputy director of public works, city of Sacramento.

Mr. DODGE. Thank you, Mr. Chairman.

My name is Don Dodge. I am the deputy director of public works for the city of Sacramento. I appear before you on behalf of the mayor, Anne Rudin, and the Sacramento City Council. I have along with me our flood control engineer/manager for our staff, Terry Paxton.

Today, I hope to impress upon you the vital importance of continuing our current projects to find a permanent solution to the critical flood problems facing the city of Sacramento and our surrounding agencies.

You need to know that as the city of Sacramento, we have appropriated our funds for the next 3 years for our projects. We strongly support the California Water Commission and the items they have requested to you as a part of the budget that you should appropriate.

We are in agreement—eight communities along with the state and the federal government—to sign an agreement for our local participation.

With that, I would like to thank you very much for your consideration.

[The statements follow:]

STATEMENT OF DON DODGE, DEPUTY DIRECTOR OF PUBLIC WORKS, SACRAMENTO, CALIF.

My name is Don Dodge. I am the Deputy Director of Public Works of the City of Sacramento, California. I appear before you on behalf of the Mayor, Anne Rudin and the Sacramento City Council.

Today I hope to impress upon you the vital importance of continuing the current studies to find a permanent solution to critical flood problems facing the City of Sacramento and greater surrounding areas.

Over the past year, the City of Sacramento, in cooperation with the Corps of Engineers, has made significant progress in the study of major aspects of our flood problems. Study results are summarized in the U.S. Army Corps of Engineers, Reconnaissance Report, American River Watershed Investigation, California, previously submitted to your technical staff.

Our interest today, however, is the Fiscal Year 88-89 funding for the Corps of Engineers' American River Watershed Feasibility Study, which was initiated during the City's current fiscal year. The President's FY 88-89 budget includes $600,000 which will pay the Federal portion (50% of study cost) of the second phase of this projected three year study. This amount, added to local funding, will cover the Corps projected study cost for FY 88-89. The total estimated cost of the three year study is $2.5 million.

Local funding (50% of the $2.5 million total study cost) will be shared by the California State Reclamation Board and Department of Water Resources (local sponsors), the City of Sacramento, the County of Sacramento, the County of Placer, the County of Sutter, the County of El Dorado, the American River Flood Control District and the Reclamation District 1000. The feasibility cost sharing agreement between the local sponsor and the United States of America is presently being negotiated. Likewise, the terms of the local cost sharing agreement between the local sponsor and the above mentioned agencies have been negotiated and the agreement should be fully executed in the near future. It is the City's goal that all cost sharing agreements be executed by April 15, 1988 to allow for an uninterrupted transition from the Reconnaissance to the Feasibility Phase of the investigation. (Copies of agreements attached)

We believe that the various agencies demonstration of willingness to share $1.25 million of the cost of the study gives ample evidence that we are united and committed to resolving the flood problem of our City and the surrounding areas. A technical task force has been formed, including members from each agency and has been very effective in developing a sense of cooperation and making sure that the needs of all are addressed. Additionally, several bills have been introduced by our state representative which could become, when enacted, the funding mechanism of a future flood control project.

It has just been a little over two years since the February 1986 rains resulted in record flows for the Sacramento and American Rivers that nearly caused our existing flood control system to fail. If such had happened, approximately 325,000 people and $15 billion in flood damageable property would have been threatened. Since this flood, the local participants have worked hard to identify a project that will provide additional flood protection for the City and surrounding areas. We have worked closely with the Corps in these efforts and have been very pleased with the high level of cooperation and support we have received from that organization in the past year. Together, we will see this much needed project through to completion.

Before closing, I would like to take a moment to express our deep appreciation for the hard work and moral support generously given by Congressman Vic Fazio and Congressman Robert Matsui. During the last year, considerable time has been devoted by both Congressmen to determine the wishes of their constituents. This effort, on their part, has demonstrated that there is a local consensus and support for additional flood control facilities. Facilities which can be constructed in the shortest time possible.

Our consensus that additional flood protection must immediately be developed for our constituents, however, has not blinded our vision as to any future water and power needs. In this light the City has adopted a resolution supporting, as one of the alternatives to be investigated in this feasibility phase, an expandable dam at the existing Auburn site which could supply water and power as the need develops.

Thank you very much for your consideration.

STATEMENT OF RECLAMATION DISTRICT NO. 1000, SACRAMENTO, CALIF.

The Board of Trustees of Reclamation District No. 1000 has approved by resolution a local cost sharing agreement with the State of California and other local public entities to fund the non-federal share of the Corps of Engineers feasibility study of the American River Watershed, California. The District fully supports the Corps efforts in this study in an effort to correct serious flood control deficiencies made apparent in the floods of February, 1986.

Actions should be iniated as quickly as possible to protect the developed and developing areas of Sacramento, Sutter and Placer Counties to at least a 200-year event level of flooding.

On behalf the of the Board of Trustees of the District and residents of Reclamation District No. 1000 I respectfully request that your committee approve the appropriation for the Corps of Engineers to undertake this vital feasibility study of the American River Watershed.

STATEMENT OF BOARD OF SUPERVISORS, SACRAMENTO COUNTY, CALIF.

On April 5, 1988 the Board of Supervisors of Sacramento County approved a local cost sharing agreement with the State of California and other local agencies to share the non-federal cost of the Corps of Engineers' feasibility study of the American River Watershed, California. Sacramento County thus fully supports the Corps efforts in undertaking the study to correct the serious flood control deficiencies discovered in the severe flood of February 1986. The flood protection works in protecting the Sacramento Metropolitan area have been found to provide about 70-year flood protection rather than the 120-year and greater flood protection previously believed to exist.

We believe that measures should be taken as quickly as possible to provide a minimum of 100-year flood protection to the developed and developing areas of Sacramento County. We also support additional flood control measures to provide higher levels of flood protection commensurate with the need to protect the 325,000 people and 15 billion dollars in damageable property in the flood plain. The threat to life from flooding is significant, and the Corps estimates average annual cost damages in the area to be about 123 million dollars.

On behalf of the Sacramento County Board of Supervisors and the citizens of Sacramento County, I respectfully ask that your committee approve the appropriation for the Corps of Engineers to undertake this crucially important feasibility study of the American River Watershed.

STATEMENT OF AMERICAN RIVER FLOOD CONTROL DISTRICT, SACRAMENTO, CALIF.

American River Flood Control District was formed in 1930 for the purpose of maintaining the levees on the American River along its passage through the City of Sacramento. During the flood of February 1986, the American River Flood Control District levees carried more water than their designed capacity, according to the Corps of Engineers. The levees suffered substantial damage, though, fortunately, did not fail. The District is gravely concerned at the prospect of a repetition of 1986 and even more gravely concerned that the Corps of Engineers has now concluded that 1986 was not even a one in one-hundred year occurrence, but rather closer to one in seventy.

American River Flood Control District has joined the State Reclamation Board, the State Department of Water Resources, the City and the County of Sacramento and other local agencies to fund a study by the Army Corps of Engineers as to the feasibility of providing urgently needed flood protection to the City of Sacramento.

As the testimony of the City of Sacramento will show, this District, along with the City and other local agencies, has demonstrated its willingness to share the cost of the study. We are committed to solving the flood problems of the City of Sacramento and the surrounding areas.

Your subcommittee is strongly urged to approve the fiscal year 1988-89 funding for the Corps of Engineers American River Watershed Feasibility Study for which matching funds have already been committed by this District, along with the other local agencies.

CALIENTE CREEK, CALIF.

STATEMENT OF BEN AUSTIN, SUPERVISOR, KERN COUNTY, CALIF.

Mr. HILL. Next, Ben Austin, the second district supervisor for the county of Kern, and the people with him on Caliente Creek have filed a statement on the Caliente Creek project.

[The statements follow:]

STATEMENT OF BEN AUSTIN, SUPERVISOR OF SECOND DISTRICT, KERN COUNTY, CALIF.

I am Ben Austin, Supervisor of the Second District in Kern County, California. I am here today on behalf of the Kern County Board of Supervisors, the Kern County Water Agency and several local districts to request your support for Fiscal Year 1988-89 funding to continue preconstruction engineering and design work for the Corps of Engineers' Caliente Creek flood control project in Kern County. We are supporting the President's Proposed Budget allocation of $1.2 million for this purpose.

With me today are Mr. Randall Abbott of the Kern County Department of Planning and Development Services, and Kern County Water Agency Board of Directors President John L. Willis.

As you may recall, the Caliente Creek Flood Control Project is the first Corps project in the nation for which local interests cost-shared 50 percent with the federal government for the feasibility study. The feasibility study is now complete, and indicates a favorable benefit-to-cost ratio of 1.2. The proposed $58 million project consists of a single flood detention reservoir and two flood channels.

FY 88-89 funding will be used to continue foundation exploration work, initiate dam design work, begin the reservoir operation study, do all the survey work for the channels, and begin design specifications for the channels.

The Caliente Creek project enjoys exceptionally strong and cohesive local support. Under the feasibility study cost-sharing agreement with the Corps, local interests have spent more than $390,000. In addition to the financial expenditures we have made for the feasibility study, we are committed to cost-share the construction phase of the project as well. Although actual construction is a few years away, we are close to completing the process of identifying and implementing the appropriate local organizational structure to develop the financial resources for project construction, operation and maintenance.

This level of financial and institutional commitment would not exist unless the project were viable, economically feasible, and urgently needed. The local districts who have joined the County Board of Supervisors and Kern County Water Agency in this concerted, unified effort to solve Caliente flooding problems are Arvin-Edison Water Storage District, Kern Delta Water District and Lamont Storm Water District. Our goal is to assure that damages such as those that were incurred during the historic

floods of 1983 and 1978 will never have to be experienced again. Those floods together caused more than $36 million in damages.

Your past support for the Caliente project is deeply appreciated. We ask for your continued support, specifically for the $1.2 million allocation in the proposed FY 88-89 budget.

Thank you for this opportunity to present our concerns to you today.

STATEMENT OF KERN COUNTY (CALIF.) WATER AGENCY

I am John L. Willis, president of the board of directors of the Kern County Water Agency in Bakersfield, California. I join Kern County Supervisor Ben Austin in requesting your support for Fiscal Year 1988-89 funding to continue preconstruction engineering and design work for the Corps of Engineers' Caliente Creek flood control project in Kern County. We are supporting the President's Proposed Budget allocation of $1.2 million for this purpose.

As you may recall, the Caliente Creek Flood Control Project is the first Corps project in the nation for which local interests cost-shared 50 percent with the federal government for the feasibility study. The feasibility study is now complete, and indicates a favorable benefit-to-cost ratio of 1.2. The proposed $58 million project consists of a single flood detention reservoir and two flood channels.

FY 88-89 funding will be used to continue foundation exploration work, initiate dam design work, begin the reservoir operation study, do all the survey work for the channels, and begin design specifications for the channels.

The Caliente Creek project enjoys exceptionally strong and cohesive local support. Under the Kern County Water Agency-Corps of Engineers cost-sharing agreement for the feasibility study that was executed in 1986, the Agency has spent more than $350,000 in cash and in-kind services for the study. This figure does not include an estimated $40,000 spent by the County of Kern on in-kind services. This level of financial commitment would not exist unless the project were viable, economically feasible, and urgently needed. The Kern County Board of Supervisors, Arvin-Edison Water Storage District, Kern Delta Water District and Lamont Storm Water District have joined the Agency in a concerted, unified effort to achieve a solution to Caliente flooding problems as soon as possible so that damages such as

those that were incurred during the historic floods of 1983 and 1978 will never have to be experienced again. Those floods together caused more than $36 million in damages.

In addition to the financial commitment we have made to the feasibility study, the Agency and local districts are committed to cost-share the construction phase of the project as well. Although actual construction is a few years away, we are close to completing the process of identifying and implementing the appropriate local organizational structure to develop the financial resources for project construction, operation and maintenance.

Your past support for the Caliente project is deeply appreciated. We ask for your continued support, specifically for the $1.2 million allocation in the proposed FY 88-89 budget.

Thank you for this opportunity to present our concerns to you today.

Los Angeles County Drainage Area Study

STATEMENT OF CHRISTIAN DATWYLER, ASSISTANT DEPUTY DIRECTOR, LOS ANGELES COUNTY PUBLIC WORKS

Mr. Hill. Our next witness present is Christian Datwyler, assistant deputy director of the Los Angeles County Public Works.

Mr. Datwyler. I am Chris Datwyler, assistant deputy director of the Los Angeles County Department of Public Works. I am here to support the Los Angeles County drainage area study being conducted by the Corps of Engineers. I have filed a complete statement with the committee.

Thank you.

[The statement follows:]

STATEMENT OF N.C. DATWYLER, ASSISTANT DEPUTY DIRECTOR, LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

Summary of recommendation by Los Angeles County Department of Public Works concerning the budget allocations to the U.S. Army Corps of Engineers.

> Los Angeles County Drainage Area (LACDA) Study - We strongly support the President's budget and the California Water Commission's recommendations for an allocation of $592,000 for completion of the LACDA Study. Because of the seriousness of the deficiencies in major elements of our flood control system, we further urge that Congress consider authorizing construction of the remedial work as soon as this study is completed.

Mr. Chairman and Gentlemen:

The drainage system that serves most of the 8.0 million residents of Los Angeles County is one of the most extensive flood control and water conservation systems ever built in the United States. The economy and the well being of the residents of the nation's second largest metropolitan area is directly dependent on the protection afforded by this system.

Flooding which occurred in the Los Angeles Basin prior to the construction of the existing dams and channels was responsible for the taking of lives, damaging of property, and interrupting commerce and trade. The level of flooding was so great that at times the County was isolated from the rest of the nation.

The Corps of Engineers began construction of major elements of the system in the 1930's. Since the major segments were completed, it is estimated that the system has prevented $3.3 billion in potential flood damage. Unfortunately, some of its design capacity was based on studies of population projections made in the 1930's which did not anticipate the extensive development of the Los Angeles basin which occurred following World War II. Actual development has been greater than anticipated, resulting in significantly increased storm runoff which the existing system is not able to carry.

The Los Angeles County Drainage Area Study was started in 1972 when it was realized that much more extensive urbanization had occurred than was assumed by the designers of the system. The purpose of the study is to determine if the major elements of the system are adequate, and if they are not, to recommend appropriate cost-effective mitigation measures to correct the identified deficiencies.

During the past year, the Corps of Engineers achieved several milestones in the LACDA Review Study with the completion of the Problem Identification Phase and a series of five community workshops. The Problem Identification Phase confirmed that the "backbone" LACDA flood control system does not have the capacity to prevent flooding from the 100-year flood. This flood could inundate an area of up to 85 square miles, containing development valued at $18 billion which would suffer approximately $2.5 billion in damages. Most areas would experience flooding of 2 to 4 feet; however, in some areas, flood waters could be as deep as 8 to 10 feet. Upon completion of the Problem Identification Phase, the Corps conducted a news briefing and community workshops to inform the public and to solicit questions and alternative solutions which the community would support. In addition, the Corps made several presentations to local City Councils and conducted press interviews when requested.

Currently, the Corps is nearing completion of the Plan Formulation Phase which will lead to development of a recommended plan to solve the flooding problem. The final report is scheduled for completion by August 31, 1989. Hence, Federal funding for Fiscal Year 1989 is essential for completion of the Study. We feel it is very important to the residents of Los Angeles County that the Corps be fully funded to complete this important study expeditiously so that construction of critically needed drainage facilities can begin as soon as possible.

We, therefore, strongly urge that Congress give high priority to the funding of the LACDA Study at the $592,000 level proposed in the President's budget and that because of the magnitude and seriousness of the problem, consider authorizing construction of the remedial work contingent upon submittal of the Report on the LACDA Study by the Secretary of the Army.

CENTRAL VALLEY WATER RESOURCE PROJECTS

STATEMENT OF MICHAEL CATINO, MANAGER, CALIFORNIA CENTRAL VALLEY FLOOD CONTROL ASSOCIATION

Mr. HILL. Our next witness is Mike Catino, retired from the Bureau of Reclamation, who wears many hats.

Mr. CATINO. Thank you.

Mr. Chairman, it is a pleasure to be here today to represent the California Flood Control Association's Central Valley project.

In the expedient time here, I will say that my statement on flood control projects is in accord with that of the California Water Commission and, under the Central Valley project, I would like to emphasize that there are 16 high-priority maintenance projects which have been deferred too long.

The Central Valley Project Water Association is requesting an augmentation of $8.6 million to the Bureau of Reclamation to take care of urgently needed maintenance work.

Thank you very much, Mr. Chairman, for the opportunity to be here.

Senator JOHNSTON. Thank you.

Mr. HILL. Thank you very much, Mike.

[The statements follow:]

STATEMENT OF MICHAEL A. CATINO, MANAGER, CALIFORNIA CENTRAL VALLEY FLOOD CONTROL ASSOCIATION

Mr. Chairman and Members of the Committee: I am Michael Catino, Manager of the California Central Valley Flood Control Association (CCVFCA). We appreciate the opportunity to come before you again to present our recommendations for Fiscal Year 1989 appropriations.

The Association which I represent was organized in 1926, and since that date has supported all major State or Federal water and energy projects in California and from a distance all such public works developments in the Nation. Seventy-five Reclamation, Levee Maintenance, and Flood Control Districts, Cities, and Counties comprise its membership; located south from Red Bluff to Manteca, California, and containing about a million acres along the Sacramento and San Joaquin Rivers and Delta areas.

In California we have great variations in our inflows for water supplies. Last year we told of the devastating floods in 1986 and this year the runoffs are below normal with some major reservoirs at about 75 percent of their capabilities. These abnormalties prompt us to continue to press for investigations and construction of various water restraining and conservation facilities.

Our Association recommends that you give your utmost consideration to providing the Corps of Engineers with the amounts included in the President's Budget. However, we wish to provide emphasis on three program entities. They are:

1. Northern California Streams - Placer, El Dorado, Sacramento which includes the study for a reanalysis of Auburn Dam with three study alternatives. We wish to place in the record that the California Central Valley Flood Control Association supports only the multipurpose 2.3 million acre-foot reservoir which will ultimately provide all of the functions in the original authorization. This position on Auburn is comparable to our long standing on similar projects.

2. For the Sacramento River Flood Control Project we recommend an augmentation to increase the President's Budget from $2.285 to $3.485 million. This increase will keep proposed construction work on schedule.

3. For the Lower San Joaquin River and Tributaries the $1,500,000 for snagging and clearing work will commence a program that has been deferred too long and we need to remove the constraints on the original river flow design capabilities.

Our recommendations are summarized as follows:

General Investigations - Surveys	
Sacramento-San Joaquin Delta Investigations	$ 230,000
Northern California Streams-Sacramento Metropolitan Area Interim	300,000
Inspection of Completed Works-Sacramento River Flood Control Projects	900,000
Northern California Streams-American River Watershed, Placer, El Dorado, Sacramento	600,000
Northern California Streams Yuba River Watershed	500,000
General Investigations - Pre-Construction Engineering and Design	
Northern California Streams-Dry Creek Placer, Sacramento	400,000
Construction - General	
Cache Creek - Settling Basin Yolo	3,250,000
Lower San Joaquin River and Tributaries (Snagging and Clearing Only)	1,500,000
Sacramento River Bank Protection	10,000,000
Sacramento River Flood Control Project	3,485,000

STATEMENT OF MICHAEL A. CATINO, MANAGER, CENTRAL VALLEY PROJECT WATER ASSOCIATION

I am Michael Catino, Manager of the Central Valley Project Water Association. The Association represents 90 major water, irrigation and Municipal Utility Districts and Cities and through common affiliation, all of the 275 Central Valley Project water contractors. We appreciate the opportunity to come before you again to present our recommendations for the Central Valley Project General Investigations, Construction and Operation and Maintenance Programs for the Bureau of Reclamation (BOR) in Fiscal Year 1989.

In most cases we support the President's Budget but feel some augmentation is needed as follows:

The General Investigations needs an increase from $1,381,000 to $1,856,000. This increase of $475,000 is for off-stream storage. The budget does not provide any funds but the Bureau of Reclamation needs to participate with the State in their proposed Los Banos Grande Dam and facilites and other potential Federal sites such as Hungry Hollow on the East Side of the San Joaquin Valley and Los Vaqueros in Contra Costa County.

The CVP Construction Program requires an increase from the budgeted $59,465,000 to $60,905.000. This slight increase of $1,440,000 will provide $200,000 additional funds for the Bureau of Reclamation to participate in the Corps of Engineer's alternative studies at the Auburn Damsite. The balance of the increase of $1,220,000 will be used on the San Felipe Division - $300,000 for water supply studies in the Pajaro Valley and $920,000 for cathodic protection of the Hollister pipeline and other clean-up items.

The Central Valley Project Operation and Maintenance Program requires immediate attention to enable the Bureau of Reclamation to provide water service to its contractors to meet scheduled activities for completion of joint environmental reports with the State of California and separate reports for water contracting.

The President's Budget for FY 1989 provides funding for $44,959,000. We recommend an augmentation of $8.6 million to a total of about $53.6 million. The total increase is composed of the following work and contract items:

- Bay/Delta Water Rights Hearings
- EIR for Consolidated and Expended Place of Use
- EIR/EIS for Joint SWP and CVP Wheeling 10(h) Contract
- EIR/EIS for Joint South Delta Investigation
- Conjunctive Water Use Study Stanislaus and Calaveras River Basin
- Stanislaus River Fishery Study (USFWS & DFG)
- Shasta Reservoir Temperature Monitoring
- Tracy Fish Facilities Rehabilitation
- Warehouse Stock
- Nimbus Fish Hatchery Modification (DFG)
- O'Neill and Tracy Pumping Plants Intake Channel Dredging
- Delta Cross Channel Gate Rehabilitation
- EIS/EIR Change in Point of Diversion
- EIS Water Marketing Program
- Trinity River Channel Maintenance
- Excess Lands Appraisals for Reclamation Reform Act
- Suisun Marsh Preservation Agreement
- San Luis Unit - Joint Facilities - Dos Amigos Pumping Plant Impeller Replacement

Separately, the Bureau of Reclamation is proposing that legislation be enacted to create a permanent appropriation to include water and power revenues that by law must be deposited in the Reclamation Fund. These funds would be available without further appropriation for operation, maintenance and replacement costs. In general this would establish a "Revolving Fund" similar to those authorized for Boulder Canyon and Colorado River Basin Projects.

Since the Project beneficiaries (water and power users) are legally responsible for the costs of reimbursable O&M work it is reasonable to vest control with the users. In the final analysis the users control the O&M program through the ratemaking process and this program has no impact on the U.S. Treasury.

The permanent appropriation will provide an efficient business-like arrangement where the users can make an input to the operations which they are solely financing.

It is our understanding that a final proposal will be submitted to the Congress by May 1, 1988. We intend to comment on this legislation and its relationship to the future operation, maintenance and replacement program of our Central Valley Project. We urge the Congress to pass this essential legislation subject to those restrictions and limitations that may be included in annual appropriations acts for all reclamation O&M projects where it is applicable.

A summary of the foregoing is attached which compiles those programs and augmentation amounts of interest to our Association.

SUMMARY
Bureau of Reclamation

	President's FY 1989 Budget	CVPWA Recommendations
	$000's	
General Investigation (GI)		
Kellogg Unit-CVP-Contra Costa County	$ 175	$ 175
Off-Stream Storage	0	475
San Joaquin Valley Conveyance Study	150	150
Delta Water Management Program	350	350
Minor Work in Connection with Completed Projects	24	24
Environmental and Interagency Coordinated Activities	432	432
Refuge Water Supply	75	75
Technical Assistance to States	175	175
Subtotal (GI)	$ 1,381	$ 1,856
Special		
Coleman Fish Hatchery (USFWL Service Project-Shasta and Tehama Counties	$ 0	$ 6,500
Construction and Rehabilitation (C&R)		
Central Valley Project		
Sacramento River Division	$ 5,231	$ 5,231
Auburn-Folsom South Unit	1,500	1,700
San Luis Unit	27,732	27,732
Trinity River Division - Restoration Program	11,642	11,642
San Felipe Division	500	1,740
Miscellaneous Project Programs[1/]	12,860	12,860
Subtotal (C&R)	$59,465	$60,905
Operations and Maintenance (O&M)		
Central Valley Project	$ 44,959	$ 53,559
Total CVPWA Recommendations	$105,805	$122,820

1/ Includes Delta Support Studies $1,900,000, Suisun Marsh Preservation Agreement $7,960,000, Temperature Control Device at Shasta $3,000,000.

SANTA ANA RIVER MAINSTEM FLOOD CONTROL PROJECT

STATEMENT OF MELBA DUNLAP, SUPERVISOR, RIVERSIDE COUNTY, CALIF.

Mr. HILL. Our next witness is Melba Dunlap, who will speak on items 21, 22, and 24.

Ms. DUNLAP. Thank you, Mr. Chairman.

I am Supervisor Melba Dunlap, chairman of the board of supervisors of Riverside County Flood Control and Water Conservation District. I appreciate the opportunity to appear before your committee on behalf of our district; the Santa Ana mainstem project, Orange County; and I will speak briefly for the Elsinore Valley Municipal Water District.

As you know, the Santa Ana River project was authorized in the Water Resources Development Act of 1986 and Orange, San Bernardino, and Riverside Counties have been working diligently with the Corps of Engineers to complete the local cooperation agreements.

The President has proposed a new construction start for the Santa Ana River and included $15 million in the proposed fiscal year 1989 budget for the Santa Ana River. Riverside County strongly joins Orange and San Bernardino Counties in the support of this appropriation and urges your committee to approve the $15 million for the fiscal year 1989.

ELSINORE VALLEY IRRIGATION DISTRICT LOAN

We also support the President's budget proposal of $10.6 million for the Bureau of Reclamation's small loan projects for the Lake Elsinore management project. This project is vital to the Lake Elsinore community's economic well-being and we urge your continued support of that project by appropriating the $10.625 million.

Last, we are asking for your committee's support for the Lake Elsinore small flood control project, by asking that the Chief of Engineers proceed with construction of that project in the fiscal year 1989. This small project would be funded under the continuing authority of the Chief of Engineers and interfaces with the previously mentioned Bureau of Reclamation Lake Elsinore management project. The two projects should proceed together.

Thank you for the opportunity to make these statements before your committee today on behalf of the Orange County and Riverside County and the Elsinore Valley Municipal Water District. We have submitted a detailed statement for the record.

Thank you, sir.

[The statements follow:]

STATEMENT OF MELBA DUNLAP, SUPERVISOR, RIVERSIDE COUNTY, CALIF.

SUMMARY RECOMMENDATIONS

SANTA ANA RIVER - MAINSTEM	$15,000,000
Pre-Construction Engineering and Design	
SANTA ANA RIVER AND ORANGE COUNTY	$ 616,000
LAKE ELSINORE MANAGEMENT PROJECT	$10,625,000
Bureau of Reclamation Small Project Program	
LAKE ELSINORE SMALL FLOOD CONTROL PROJECT	Support

SANTA ANA RIVER - MAINSTEM

The Water Resources Development Act of 1986 (Public Law 99-662) authorized the Santa Ana River - All River project which includes improvements along the river in Orange County, enlargement of Prado Dam and Reservoir near Corona, California, construction of a new dam (Seven Oaks) near the entrance to Santa Ana Canyon, improvement of the Oak Street Drain Channel in Corona, California, improvement of Santiago Creek in Orange County and various mitigation features as set forth in the Chief of Engineers' Report to the Secretary of the Army. The Boards of Supervisors of Orange, Riverside and San Bernardino Counties are in support of this needed project and have so stated in past resolutions to Congress.

The Phase II General Design Memorandum is nearly complete and the Corps of Engineers is negotiating the necessary Local Cooperation Agreement (LCA) with the three Counties. The President has recommended that 15 million dollars be appropriated in Fiscal Year 1989 for the construction start of the Santa Ana River Mainstem Project. This 15 million dollars will provide for commencement of the first construction contract at Seven Oaks Dam and the acquisition of needed enhancement lands near the mouth of the channel at the Pacific Ocean.

We strongly support the President's request for 15 million dollars to start this long awaited project and urge the Committee to approve the funds in the Fiscal Year 1989 appropriations.

SANTA ANA RIVER AND ORANGE COUNTY

The Corps of Engineers has been studying certain specific flooding problems along streams tributary to the Santa Ana River and in Orange County since the mid 1970's. For the past four years they have concentrated efforts on a study of the flooding problems around Lake Elsinore in Riverside County. This study has resulted in the Corps and the Riverside County Flood Control and Water Conservation District proceeding with a Small Flood Control Project design at Lake Elsinore under provisions of Section 205 of the Flood Control Act of 1948.

There are also continuing studies that must be completed on other streams in Orange County (Interim Report No. 3) and tributary streams to the Santa Ana River in Riverside and San Bernardino Counties (Interim Report No. 2). Included in Interim Report No. 2 are studies of the feasibility of extending the levee along the San Jacinto River approximately four miles farther downstream. Flooding occurred along this reach of the river in 1978, 1979, 1980 and 1983 which required flood fight efforts to keep the stream within the existing banks. The flood of February 1980 breached the local levees and caused extensive flooding damages to valuable agricultural land, closed major roads and highways, destroyed one major county road and caused considerable economic losses in the Hemet-San Jacinto Valley in Riverside County. Riverside County, including this area, is the fastest growing area in the United States. Future floods will cause even greater economic loss.

The President's budget includes $336,000 for continuation and completion of Interim Report No. 3 and $280,000 to complete the Santa Ana River and Orange County studies final report. We urge the Committee to approve $616,000 for the Santa Ana River and Orange County studies for Fiscal Year 1989.

LAKE ELSINORE MANAGEMENT PROJECT

The Elsinore Valley Municipal Water District, the County of Riverside and the State of California, Department of Parks and Recreation, cooperated in the preparation of a study and report of the problems in stabilizing Lake Elsinore through flood control and water development improvements and enhancing the recreational opportunities of the lake under the provisions of the Small Reclamation Projects Act of 1956 (Public Law 84-984) as amended. The results of that study and report were that flood control improvements, water supply development, modification to operational size of the lake and recreational improvements were feasible.

The Elsinore Valley Municipal Water District, acting as the local sponsor, submitted the report entitled, Proposed Lake Elsinore Management Project, to the Bureau of Reclamation

as an application for a loan and grant of $26,000,000 for the 39.7 million dollar project. The Secretary of Interior approved the loan and grant application in March 1985.

The President has included $10,625,000 in the Fiscal Year 1989 budget for the Bureau of Reclamation for completion of engineering design and construction start of the Lake Elsinore Management Plan. We support the President's budget recommendation and urge the Committee to approve $10,625,000 for the Lake Elsinore Management Project Loan in Fiscal Year 1989.

LAKE ELSINORE SMALL FLOOD CONTROL PROJECT

The Riverside County Flood Control and Water Conservation District and the Corps of Engineers have completed the first cost shared feasibility study under the provisions of Section 205 of the Flood Control Act of 1948 for flood control at Lake Elsinore, California. Major floods in 1980 and 1983 caused major damages to property and businesses. This flood control project, which improves the Lake Outlet Channel to control the level of flooding around the lake and through the City of Lake Elsinore along the Outlet Channel, is vital to the previously mentioned Bureau of Reclamation Project Small Project Loan for Lake Management at Lake Elsinore. The construction of the two projects must move together.

The Lake Elsinore Small Flood Control Project has a total cost of 9.8 million dollars, with the cost being shared equally with the Federal government (50 percent) and the local sponsors (50 percent). While this project will be funded under the continuing authority of the Chief of Engineers for small flood control projects, we are asking that your Committee lend its support to this project by asking the Chief of Engineers to proceed with construction of the project with funds contained in the Fiscal Year 1989 Continuing Authority for Small Flood Control Projects.

STATEMENT OF SANTA ANA WATERSHED PROJECT AUTHORITY

The Santa Ana Watershed Project Authority (SAWPA) has contracted with the Elsinore Valley Municipal Water District (EVMWD), with the concurrence of the U.S. Bureau of Reclamation (USBR), to construct the Lake Elsinore Management Project on their behalf. This project is approved for grant and loan funding under P.L. 84-984 (Small Reclamation Projects Act of 1956, as amended).

This project was approved by the Secretary of the Interior and transmitted to Congress on April 11, 1985, as an approved project. A contract with the USBR was executed on September 23, 1985. Total project cost, including local funding is estimated at $39,619,000.

Federal funding in the amount of $4,400,000 has been appropriated to date. As recommended in the President's budget for Fiscal Year 1989, we are respectfully requesting that your Committee provide for year three funding of the project in the amount of $10,650,000.

I plan to be in Washington D.C. with representatives of the Elsinore Valley Municipal Water District April 11 - 14, 1988, when your Committee will be holding hearings on the appropriation bill, and I respectfully request the opportunity for Mrs. Nancy Shafer, Vice-Chairman of the Elsinore Valley Municipal Water District Board of Directors to appear before your Committee in support of this very vital water management project. I am enclosing a summary of the Project which Mrs. Shafer will describe briefly as part of her testimony at the hearing.

We at SAWPA sincerely appreciate your assistance in scheduling the opportunity for Mrs. Shafer to appear before your Committee to testify on behalf of the SAWPA Project, and as part of the California State Water Commission presentation.

PROJECT SUMMARY

Mr. Chairman, my name is Nancy Shafer, Vice Chairman of the Elsinore Valley Municipal Water District (EVMWD) I appreciate the opportunity to submit this District's request for funding of a construction project under the authority of the Small Reclamation Projects Act.

Lake Elsinore Management Project
The Lake Elsinore Management Project is approved and authorized. The purpose of this project is to stabilize the Lake and create a permanent body of water bounded by recreational facilities and a wetlands preservation area. The proposed plan is a multi-purpose water resources program, which includes:

* Construction of a levee on the southeastern perimeter of the Lake;

* Channelizing the inlet;

* Widening, deepening, and minor relocation of the existing outlet channel;

* Construction of bridges across the outlet channel and across the inlet channel;

* Construction of three new wells and rehabilitation of the three existing wells owned by the State of California;

* Construction of service pads around the three existing wells;

* Expansion and improvement of the two existing State park units to include beaches, boat-launching facilities, and expanded campgrounds in accordance with California's State Park Recreational Plans;

* Development of a wetlands preservation area.

This program involves the establishment of a permanent Lake through the use of a levee to separate Lake Elsinore from its shallow southeastern floodplain. Natural flow would be supplemental, if necessary to maintain a minimum pool (elevation 1,240 feet) in Lake Elsinore. The Lake inlet would be relocated and improved to provide flood protection. The Lake outlet would be modified to (1) improve water quality, (2) improve discharge capacity and efficiency, (3) provide for recreational development, and (4) accommodate local delivery of agricultural water.

LAKE ELSINORE MANAGEMENT PROJECT

LOCATION

The Elsinore Valley Municipal Water District includes Lake Elsinore, the City of Lake Elsinore, and approximately 67 square miles of unincorporated land, all within Riverside County in the State of California. The District is approximately 60 miles southeast of Los Angeles and 22 miles south of the City of Riverside.

BACKGROUND

Lake Elsinore is a natural sink at the terminus of the San Jacinto River. The Lake has historically fluctuated from being completely dry during drought years to periods of severe flooding during wet years. The purpose of the Project is to maintain a minimum water elevation in the Lake during dry years by reducing evaporation losses and introducing ground-water. The purpose of the project is also to maintain a maximum water elevation in the Lake during wet years through the use of an evacuation channel. By managing the Lake within optimal water surface elevations, benefits will be realized by agricultural irrigators, fish and wildlife, recreational users, and property owners.

NEED FOR THE PROJECT

The City of Lake Elsinore was incorporated in 1888 and is the oldest city in Riverside County. Since that time, the economic stability, growth and development of the Community have been dictated in part by the condition of the Lake. This history has been a turbulent one with both natural and man-made events contributing to the Lake's present condition and therefore to the general condition of the Community. While the Lake has fluctuated between periods of high water with some flooding and protracted periods of drought, the lifestyles and fortunes of the residents have risen and fallen in direct relation to the level of the Lake. In the past when the water level of the Lake was high, the City of Lake Elsinore experienced periods of substantial growth and development.

Throughout the drought period, a number of individuals and public agencies, both state and local, have worked to improve the situation at Lake Elsinore. In 1949, the Lake Elsinore Recreation and Park District was formed to manage and administer a program of Lake stabilization and recreational facility development. The Recreation and Park District staff worked throughout the early and mid-50's to develop the Lake for public use and to locate reliable water sources for stabilization of the Lake level. Simultaneously, efforts were underway to have Lake Elsinore incorporated into the State Park System. In 1957, the California State Assembly granted its approval, formally accepting Lake Elsinore as a state recreational area. In an effort to stabilize the Lake and to combat the effects of the continuing drought, the Lake Elsinore Recreation and Park District and the State Department of Parks and Recreation, working together, drilled three deep wells in the southeast end of the Lake. The wells draw water from the underground water basin and lift the water to the Lake.

The year 1969 brought a 1-year relief from the drought, raising the Lake level approximately 18 feet. Eight dry years following 1969 caused the Lake to once again recede. Without the replenishing well water and the single wet year (1969), Lake Elsinore would have been dry for 18 straight years (1960-1977).

PHYSICAL WORKS

The major features of the proposed plan are:

1. Main levee: approximately 11,000 feet long by 33 feet high with a top elevation of 1265, necessary to separate Lake Elsinore from the southeasterly floodplain. The levee will reduce the surface area of the Lake to approximately 3000 acres, thereby reducing evaporation losses, while also providing storage. The lands behind the levee will become available for use by agricultural irrigators and for recreational uses consistent with the land's continued designation as a floodplain (e.g. golf course).

2. Inlet channel: twin parallel levees with top elevation 1265 which will convey 100-year storm runoff from the San Jacinto River to the contained Lake Elsinore, including the runoff from a 100-year frequency storm.

3. Outlet channel modifications: deepening Lake Elsinore's natural outlet to a sill elevation of 1252, allowing outflow from the Lake to occur during major storms.

4. Outlet pump station: located at the mouth of the Lake's outlet channel. The pump station will lift a maximum 14 cfs from the Lake where it will flow downstream in Temescal Wash for ultimate use by agricultural irrigators.

5. Levee drainage pump station: capable of pumping a maximum 90 cfs, to lift local storm runoff from behind the main levee into Lake Elsinore.

6. Water supply wells: rehabilitate three existing and drill three new wells to replenish Lake Elsinore in dry years and to supply water for agricultural irrigation.

7. Lakeshore Drive Park: a new recreational day use facility located on the northeast shore of Lake Elsinore, including picnic area, beach, and marina.

8. Riverside Drive Campground: expansion of an existing campground and marina, located on the northwest shore of Lake Elsinore.

9. Distribution pump station and piping: to divert and convey water from the Temescal wash to agricultural irrigators.

STATEMENT OF FLOOD CONTROL DISTRICT, ORANGE COUNTY, CALIF.

I am Carl Nelson, Director of Public Works for the County of Orange. The Orange County Flood Control District is one of the three local sponsors for the Santa Ana River Mainstem Project, which is acknowledged as the greatest flood potential in the western United States.

We are very pleased that the President's budget for FY 1988 includes $15,000,000 for a construction start on this project which was authorized as a part of Public Law 99-662 in 1986. In order to assure that the project design will be completed on schedule, the Orange County Board of Supervisors and the Assistant Secretary of the Army for Civil Works have executed a Memorandum of Agreement whereby the Orange County Flood Control District will supplement the available Congressional appropriations by the payment of $3 million in local funds during FY 1987 and 1988.

With the advance of local funds, the Corps of Engineers have scheduled completion of the Phase II General Design Memorandum in August of 1988. Concurrently, the local sponsors and the Corps staff have been negotiating the local cost-sharing agreement that will provide for local sponsors compliance with the authorizing Act P.L. 99-662.

In the first year of project construction the Corps expects to commence a test fill for the Seven Oaks Dam and acquisition of lands for habitat enhancement of the endangered California Least Tern. Locally, the Orange County Flood Control District has accumulated $80 million and is ready to proceed with acquisition of lands, easements, rights-of-way and relocations required by the new federal law. Upon completion this $1.1 billion project will provide badly needed flood protection to the more than 2 million residents who live along the river within the counties of San Bernardino, Riverside and Orange.

Mr. Chairman, previous Congressional support for the Santa Ana River Mainstem Project is very much appreciated and on behalf of the Board of Supervisors of Orange County, California I respectfully request that your committee support the President's budget in the amount of $15,000,000. We also request support in the President's budget in the amount of $336,000 for continued work on Interim Report III (West Orange County Flood Channels).

I appreciate the opportunity to appear before your committee on behalf of the 2,300,000 residents represented by the Board of Supervisors of Orange County, California.

STATEMENT OF SANTA ANA RIVER FLOOD PROTECTION AGENCY

I am George Osborne, representing the Santa Ana River Flood Protection Agency, a joint povers group of 20 cities, the County of Orange, the Orange County Water District, the County Sanitation Districts and the Orange County Flood Control District. These agency members represent more than 2,000,000 persons in Orange County, California who would be adversely affected by a major flood in the Santa Ana River.

The Agency strongly supports the proposed budget amount of $15,000,000 for the actual start of construction on the Santa Ana River Mainstem Project. This start will represent the beginning of the end of a long struggle for Orange County's protection from Santa Ana River flooding.

The basic problem is that Prado Dam, completed in 1940 under the authorization of the Flood Control Act of 1936, was designed to contain and control a flood thought at the time to be adequate. For a number of years the cities of Orange County and the county government itself relied on the adequacy of Prado Dam in approving new development in Orange County. Then in 1970 the Corps of Engineers' restudy of the Santa Ana River Basin flood problems as authorized by the Congress in 1964 revealed that Prado Dam would control floods up to only a 70-year frequency and that larger floods could cause widespread damage in Orange County. The current estimate of damage by the Corps of Engineers from the standard project flood is in excess of $12 billion.

The river has its origin in the high San Bernardino Mountains and flows across the three counties for nearly 100-miles to reach the Pacific Ocean. While the greatest damage from large Santa Ana River floods would be inflicted on Orange County, Riverside and San Bernardino Counties would also suffer substantial damage. Through the years since 1964 the three counties have worked together with a remarkable degree of unanimity in assisting the Corps of Engineers in the development of a mutually acceptable flood control plan. The resultant plan, the Santa Ana River Mainstem Project authorized by PL 99-662 has the full support of the three counties.

The three counties have long supported cost sharing between the federal government and local sponsors of flood control projects and are prepared to commit themselves through the local cooperation agreement to cost sharing required by the Santa Ana River Project. In 1974 the Orange County Flood Control District established an accumulative capital outlay fund in anticipation of eventual cost sharing in a project to solve the flood threat from the river. Each year the district has faithfully deposited as much as possible into the fund and with the proposed 1988-89 budget deposit the fund will exceed $100 million.

Great progress was made in 1987 in formulating the local cooperation agreement (LCA) between the Secretary of the Army and the sponsors of the Santa Ana River Project to specify, among other things, the obligations for and distribution of local costs between the three sponsors. A successful completion and execution of the LCA is expected soon after approval of the Phase II General Design Memorandum now being finalized by the Corps of Engineers. The Los Angeles District and the Southwest Division of the Corps of Engineers deserve special credit for their tremendous and successful efforts in keeping the project on schedule. Locally we all continue to be impressed by their dedication and capabilities.

We are confident that your approval of the proposed $15,000,000 for the Santa Ana River Mainstem Project will result in an actual start of construction of this important tri-county project.

SAN BERNARDINO COUNTY—DAY CREEK LOAN

STATEMENT OF KEN MILLER, FLOOD CONTROL ENGINEER, SAN BERNARDINO COUNTY, CALIF.

Senator JOHNSTON. Our next witness is Ken Miller, flood control engineer for San Bernardino County.

Mr. MILLER. Mr. Chairman, I am here today to represent the San Bernardino County Board of Supervisors on our county's most important flood control and water conservation projects.

San Bernardino County wishes to join with Mrs. Dunlap and the representative of Orange and Riverside Counties in support of the Santa Ana River mainstem project and encourage your support of necessary appropriations.

San Bernardino County's most important Bureau of Reclamation's small project is the Day Creek water project. Through the Bureau, we have been pursuing a $13 million loan to supplement available local funds on this $45 million construction project.

With currently scheduled construction, all available local construction funds—approximately $30 million—will have been exhausted. Accordingly, we ask for you support of continued appropriations for the Bureau's program to allow completion of this critical project in a timely manner.

We thank you very much for this opportunity.

[The statement follows:]

STATEMENT OF KEN MILLER, FLOOD CONTROL ENGINEER, SAN BERNARDINO COUNTY, CALIF.

I'M LARRY WALKER, COUNTY SUPERVISOR FOR THE FOURTH DISTRICT OF SAN BERNARDINO COUNTY. I AM HERE TODAY TO REPRESENT THE SAN BERNARDINO COUNTY BOARD OF SUPERVISORS ON OUR COUNTY'S MOST IMPORTANT FLOOD CONTROL AND WATER CONSERVATION PROJECTS.

THE SANTA ANA RIVER MAINSTEM PROJECT IS OF EXTREME IMPORTANCE TO THE LOCAL SPONSORING COUNTIES OF SAN BERNARDINO, ORANGE AND RIVERSIDE WITH A POPULATION OF OVER TWO MILLION PEOPLE WHO ARE CONTINUING TO FACE A SEVERE THREAT OF FLOODING FROM THE SANTA ANA RIVER.

THE PRESIDENT'S PROPOSED BUDGET INCLUDES $15.0 MILLION FOR THE CORPS OF ENGINEERS TO CONTINUE ENGINEERING AND DESIGN, TO INITIATE RIGHT-OF-WAY ACQUISITION AND TO COMMENCE CONSTRUCTION OF THIS MUCH NEEDED PROJECT. THE THREE SPONSORING COUNTIES JOINTLY SUPPORT THE PROPOSED FUNDING LEVEL AND ENCOURAGE YOUR SUPPORT IN THIS APPROPRIATION.

SAN BERNARDINO COUNTY'S MOST IMPORTANT BUREAU OF RECLAMATION "SMALL PROJECT" IS THE DAY CREEK WATER PROJECT. THROUGH THE BUREAU, WE HAVE BEEN PURSUING A $13.4 MILLION LOAN TO SUPPLEMENT AVAILABLE LOCAL FUNDING ON THIS $50.0 MILLION CONSTRUCTION PROJECT. THIS PROJECT, WHEN COMPLETED, WILL PROVIDE WATER SPREADING FACILITIES TO CONSERVE 5,000 ACRE FEET OF WATER ANNUALLY AND RETURN IT TO THE UNDERGROUND WATER SUPPLY OF AN OVERDRAFTED GROUNDWATER BASIN. THE CURRENT BUREAU BUDGET INCLUDES $1.0 MILLION OF INITIAL LOAN FUNDING. THE FIRST CONSTRUCTION PHASE, AT A COST OF $10 MILLION, IS NEARING COMPLETION. THE NEXT TWO PHASES OF WORK, TOTALING $20 MILLION IN COST, WILL BE UNDERWAY BY SUMMER. WITH THIS CONSTRUCTION, ALL AVAILABLE LOCAL CONTRIBUTION FUNDS, APPROXIMATELY $30 MILLION, WILL HAVE BEEN EXHAUSTED. ACCORDINGLY, WE ASK FOR YOUR SUPPORT OF CONTINUED APPROPRIATIONS TO ALLOW COMPLETION OF THIS CRITICAL PROJECT IN A TIMELY MANNER.

THE CALIFORNIA WATER COMMISSION IS IN SUPPORT OF EACH OF THESE IMPORTANT PROJECTS.

THANK YOU VERY MUCH FOR THE OPPORTUNITY TO TESTIFY.

STATEMENT OF BOARD OF SUPERVISORS, SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

The Board of Supervisors of the San Bernardino County Flood Control District, State of California, appreciates the opportunity to submit this most critical flood control proposal for consideration in the 1988/89 budget:

SANTA ANA RIVER MAINSTEM "All River Plan" Including Seven Oaks Dam, Mill Creek Levee, and San Timoteo Creek	$15,000,000

Your approval of this urgent project recommendation will be a continued step toward flood protection for San Bernardino County, as well as Riverside and Orange Counties.

This Board once again wishes to express deep appreciation for your past and present support of this program of priority concern, to the County, to the State and Federal Government.

SANTA ANA RIVER MAINSTEM - "ALL RIVER PLAN"

INCLUDING: SEVEN OAKS DAM, MILL CREEK LEVEES, SAN TIMOTEO CREEK, PRADO DAM

The California Counties of San Bernardino, Riverside, and Orange and a populous of approximately two million people are continuing to face a severe threat of flooding from the Santa Ana River. The Corps of Engineers has determined that flooding of this river could cause an estimated $12 billion in damage and loss of life in a severe flood. The Santa Ana River Mainstem Project - "All River Plan" would provide for much needed flood protection through the construction of improvements including the Seven Oaks Dam, Mill Creek Levees, and the San Timoteo Creek Channel in the upper Santa Ana River, and downstream improvements including the enlargement of Prado Dam, Oak Street Drain, Santiago Creek and thirty two miles of the Santa Ana River Channel from Prado Dam to the Pacific Ocean. In addition, the counties of Riverside and San Bernardino would provide necessary flood plain management along approximately 30 miles of river between two dams.

Funding in the amount of $15,000,000 is currently included in the President'S budget. This would allow for initiation of construction for the Seven Oaks Dam, commencement of right of way acquisition for enhancement lands, completion of study for San Timoteo Creek, and the continuation of project engineering and design. Your concurrence in the President's budget is encouraged.

On April 4, 1988, the California Water Commission voted support of this project.

PROJECT AUTHORIZED:	Public Law 94-587, Section 109, Approved October 22, 1976 Public Law 99-662, Water Resources Development Act of 1986
TOTAL PLANNING AND ENGINEERING COST:	$26,100,000
TOTAL PROJECT COST:	$1.29 billion-Includes $354 million local share
STATE OF CALIFORNIA WATER COMMISSION RECOMMENDATION Fiscal Year 1988/89:	$15,000,000
PRESIDENT'S BUDGET Fiscal Year 1988/89:	$15,000,000
REQUIRED ACTION:	Approval of $15,000,000 by Appropriation Committees and Congress

MINUTES OF THE BOARD OF SUPERVISORS

OF SAN BERNARDINO COUNTY, CALIFORNIA

FEBRUARY 29, 1988

On motion of Supervisor Riordan, duly seconded by Supervisor Walker, and carried, the following resolution is adopted by the Board of Supervisors of the County of San Bernardino, State of California:

RESOLUTION NO. 88-65

WHEREAS, on March 4, 1988, the State Water Commission will adopt final recommendations for Fiscal Year 1987-88 funding for water and flood control projects; and

WHEREAS, these recommendations will be submitted to the Congressional Appropriations Committee; and

WHEREAS, there are several projects needed to solve serious flood control problems and to provide water conservation facilities in San Bernardino County;

NOW, THEREFORE, BE IT RESOLVED that the San Bernardino County Board of Supervisors strongly supports and recommends the following projects:

PROJECT	PRESIDENT'S BUDGET	S.B. COUNTY RECOMMENDATION FEBRUARY 29, 1988
U.S. ARMY CORPS OF ENGINEERS		
1. SANTA ANA RIVER MAINSTEM - "ALL RIVER PLAN" INCLUDING SEVEN OAKS DAM, MILL CREEK LEVEES, SAN TIMOTEO CHANNEL, AND PRADO DAM AND RESERVOIR	$15,000,000	$15,000,000
BUREAU OF RECLAMATION		
1. DAY CREEK WATER CONSERVATION PROJECT	- 0 -	$12,400,000

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California, by the following votes:

AYES: SUPERVISORS: Mikels, Riordan, Walker, Joyner

NOES: SUPERVISORS: None

ABSENT: SUPERVISORS: Hammock

. . . . . .

STATE OF CALIFORNIA
COUNTY OF SAN BERNARDINO } ss.

I, MARTHA M. SCUDDER, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify the foregoing to be a full, true and correct copy of the record of the action taken by said Board of Supervisors, by vote of the members present, as the same appears in the Official Minutes of said Board at its meeting of FEB 29 1988 mll #34

MARTHA M. SCUDDER
Clerk of the Board

By Mary Louise Levario
Deputy

RANCHO WATER DISTRICT LOAN

PREPARED STATEMENT

Mr. HILL. Thank you very much.

Mr. Richard Steffey, president, Rancho California Water District, asked me to file his statement for the record.

[The statement follows:]

STATEMENT OF THE RANCHO CALIFORNIA WATER DISTRICT

Rancho California Water District (RCWD) is a large water district located in the southern most portion of Riverside County, adjacent, in part, with the San Diego County line. The District is comprised of some 100,000 acres or 150 square miles. All of the San Diego aqueducts pass through the center of the District from The Metropolitan Water District's Skinner Reservoir and Filtration Plant located just north of the District. RCWD owns and operates Vail Dam with a storage capacity of approximately 50,000 acre feet (larger than Skinner). RCWD also overlies the only large high quality groundwater basin south of Chino. The groundwater basin is made up of a complex system of water-bearing materials (aquifers) ranging from the surface area's zero (0) to two hundred fifty feet (250) below ground surface (younger alluvium). With extremely high recharge rates to deep, older sediments (Temecula Arcose) containing large amounts of high quality usable water, the total estimated amount of water in storage within 1,000 feet of ground surface is approximately 2,400,000 acre feet.

THE PROJECT:

The project consists of 21.8 miles of pipeline (to date 16 miles of pipeline have been constructed) and facilities to use imported water to recharge the younger alluvium without taking capacity off the San Diego Aqueduct. This will allow up to 100,000 acre feet of water to be placed in storage and will benefit the entire region. The project wil enable the District to deliver stored water to points of beneficial use and will allow the capture of flood flows which would otherwise be lost to the Pacific Ocean. The project will preserve 16,793 acres of valuable permanent agricultural crops.

In addition to the recharge facilities, some 38 wells are included in the project to recover the stored water and to extract water from the deeper zones. Twenty-six (26) of the wells have been constructed.

The total increase in production capacity represented by these wells is 43,000 gallons per minute (gpm) or 200 acre feet per day (AF/d). This increased production results in more water being available to San Diego County as it reduces RCWD's demands on the import system.

The immediate objective of the project is to provide facilities for RCWD to become more independent of the imported water facilities and to more effectively manage the tremendous storage capacity and production capability of its basin. The total project cost is slightly over $24,000,000 of which RCWD will contribute more than $3,000,000 (up-front money); the remaining $20,311,000 is being financed by a loan under the Bureau of Reclamation PL 84-94 Small Project Loan Program. This loan will be repaid with applicable interest over a period of approximately 20 years.

Slightly more than $14.4 million has been funded for the project leaving some $6.5 million for completion.

The President's budget sets out $5.45 million for Fiscal Year 1988-1989. This appropriation is supported by the California Water Commission, and your support also would be most appreciated.

DELTA SUPPORT STUDIES

STATEMENT OF JOHN DEVITO, EXECUTIVE DIRECTOR, CONTRA COSTA WATER DISTRICT

Mr. HILL. Our next witness is John DeVito, executive director, Contra Costa County Water District.

Mr. DEVITO. Honorable chairman and members of your professional staff, we would respectfully ask that in order to implement the mandates under Public Law 99–546 toward maximizing the existing facilities of the Central Valley project, maximizing their capabilities, maximizing local participation, and certainly respecting your funding dilemma, that you give favorable consideration to authorizing the funds for delta water management water quality studies.

[The statement follows:]

STATEMENT OF JOHN DEVITO, EXECUTIVE DIRECTOR, CONTRA COSTA WATER DISTRICT

SACRAMENTO - SAN JOAQUIN DELTA/BAY WATER QUALITY

Honorable Chairman and Committee members, my name is John E. DeVito, Executive Director of the Contra Costa Water District, a public agency of the State of California.

For forty-eight years, Contra Costa Water District by way of repayment contracts with the U.S. Bureau of Reclamation, has been responsible for the water supply for some 350,000 people, 23 industries that employ over 16,000 employees, and 150 small farms, through the Contra Costa Canal System, the first unit of the Federal Central Valley Project. The District also diverts water from the Delta under a vested water right dating back to 1930's prior to the CVP. We depend solely and totally on the Sacramento - San Joaquin Delta for our water supply.

Due to the USBR's over-commitment of the CVP water supply and build-ups in exports from the Delta, we will experience re-occurring increased salt water intrusion in the Delta, to a level that is adverse to public health, causes loss of certain industrial products, adds severe penalty treatment costs to all industry, and causes damage to irrigated plants. (Note attachments.)

Please note that the Bay Area Counties who depend on the Delta normally export about three percent of the total water extracted from the Delta; the San Joaquin Valley irrigated agriculture export approximately eighty-three percent and the remainder, approximately fourteen percent, is pumped over the Tehachapi Mountains into the Los Angeles Basin Counties where 16 million people over two-thirds of the State's population reside.

These adverse effects on public health, industry and agriculture occurred, during 1959 - 1960 - 1961, due to USBR operations, during the 1976 - 1977 drought, during 1987 and again during this year 1988, due to the obvious over-commitment of the CVP. For 161 days in 1959 and 143 days in 1961, due to USBR export

pumping caused salt water intrusion, the Water District distributed notices to the County Health Department, doctors, hospitals, and the press warning of high sodium levels in the water supply. USBR statements indicate that these poor water quality levels will occur in the future during normal years.

Accordingly, Contra Costa Water District respectfully requests the support for the conditions necessary to protect the beneficial uses in the Sacramento-San Joaquin Delta, San Francisco Bay and Suisun Marsh, with particular attention to:

No. 61-1-2 — Delta Support Studies Including The Suisun Marsh

Bureau of Reclamation and Department of Water Resources agree that operation of the Federal Central Valley and State Water Projects have adverse effects on municipal, industrial and agricultural users which pump their water from the Delta, as well as on fish and wildlife in the Sacramento-San Joaquin Delta and San Francisco Bay Estuary. State Water Resources Control Board's Decision 1485 requires environmental studies be continued for use in future State water rights hearings. Contra Costa Water District urges full fundings for these studies including efforts in the Bay and the Federal share of the Suisun Marsh water quality facilities.

No. 79 — Kellogg Unit-Central Valley Project Contra Costa

Consistent with the federal cost-sharing policy, Contra Costa Water District has urged the USBR Regional Director, Mid-Pacific Region, to develop a plan of study for Kellogg Reformulation that provides for in-kind

contributions at Water District expense, and to the extent District contributions meet the requirements of federal law, regulations and policy, should be credited to project costs.

Contra Costa Water District supports the President's budget for $175,000.00 which would allow the USBR to complete the advanced planning for the Kellogg Unit Reformulation and the relocation of the Contra Costa Canal Intake.

No. 79A

Off Stream Storage

Contra Costa Water District supports funding of feasibility investigations for offstream storage.

Under provisions of PL 99-546 and the Coordinated Operations Agreement, the U.S. Bureau of Reclamation now has a legal obligation to share with the California Department of Water Resources the responsibility of meeting Bay-Delta water quality standards.

Offstream storage such as the California authorized Los Banos Grande Reservoir, provides a real opportunity for the USBR to participate jointly with California Department of Water Resources in order to satisfy this legal obligation.

Contra Costa Water District supports the reprogramming of an additional $475,000.00 to provide for Federal cost sharing feasibility work.

No. 80A — Delta Water Management Program

Consistent with the USBR obligations under PL 99-546 and the Coordinated Operations Agreement, Contra Costa Water District supports the President's budget for $350,000.00 to allow the USBR to fulfill its responsibility towards developing a program that would correct or at least minimize Delta water quality problems caused by water transfers from the Sacramento-San Joaquin Delta.

No. 84 — Environmental and Interagency Coordinations Activities

Contra Costa Water District supports the President's budget for $432,000.00 so that the USBR can continue with its multi-agency responsibility as envisioned in the Coordinated Operations Agreement.

In order to implement the Congressional mandates of PL 99-546 and the Coordinated Operations Agreement, we respectfully urge your support for Contra Costa Water District and the California Water Commission's FY 87-88 recommendation for the President's budget requests and the reprogramming of additional funds for California Water Resources activities.

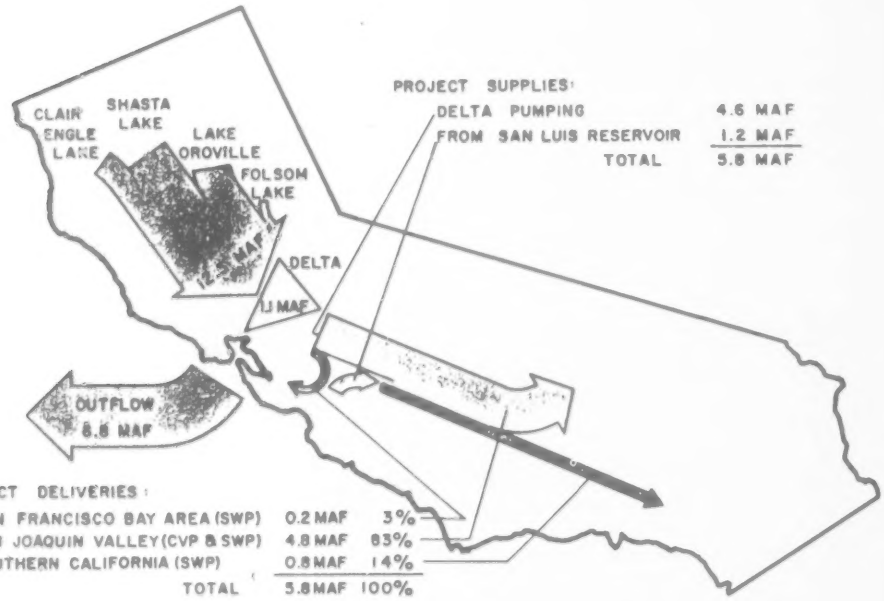
We believe that funding to implement the intent of PL 99-546 will maximize capabilities of existing projects, encourage local and State project financing and minimize the need for federal appropriations.

Please accept our appreciation for this opportunity to appear, and may this statement be made part of the record.

DELTA WATER SUPPLY AND USE - 1981

Water year 1981 (October 1, 1980 through September 30, 1981) was a dry year in the Sacramento River Basin. Natural river inflow to four major storage reservoirs totalled 11 million acre-feet (MAF), about 64 percent of the long-term average.

The diagram shows that the Sacramento-San Joaquin Delta received total river inflow of 12.5 MAF during the dry year. The inflow included augmentations of 1.4 MAF released from major storage reservoirs of the Federal Central Valley Project (CVP) and State Water Project (SWP).



Use of the Delta's 1981 inflow is summarized as follows:

Outflow to San Francisco Bay	6.8 MAF	54 percent of Inflow
Water used within Delta	1.1	9
CVP and SWP project pumping	4.6	37
	12.5 MAF	100 percent

The diagram summarizes total CVP and SWP Delta water supplies as well as the projects' deliveries during 1981. Note that the supplies included 1.2 MAF pumped from the Delta before the water year began and stored for later use in San Luis Reservoir, located in the San Joaquin Valley near Los Banos.

STATEMENT OF CONTRA COSTA COUNTY AND CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SUMMARY

Project	Requested Amount	Remarks
Walnut Creek	$6,300,000	Construction - President's Budget Recommendation - California Water Commission #37, $6,300,000
Walnut Creek Basin Investigation	$ 150,000	Feasibility Study - President's Budget Recommendation - California Water Commission #16, $150,000
Wildcat-San Pablo	$1,800,000	Construction - President's Budget Recommendation - California Water Commission #38, $1,800,000

Chair and Members of the Subcommittee:

On behalf of the people and the Board of Supervisors of Contra Costa County, California, I wish to thank you for your past support and appropriations for our flood control projects. These projects have been the foundation of our County's flood control improvement program, and have been immensely beneficial to our citizens, industries and business. It is in the hope of the continuing success of this program that I offer the following testimony:

Walnut Creek - Construction

An allocation of $6,300,000 will fund the fourth and final year of construction costs for the San Ramon Creek Bypass Project. San Ramon Creek discharges into the already improved portion of Walnut Creek. Storms of recent years have shown the tremendous value of the already constructed improvements. The extension of the project will benefit the central Walnut Creek area, its citizens and business community.

Walnut Creek Basin Investigation

The allocation of $150,000 will be matched with local flood control funds to complete a feasibility study on Tice, Murders', San Ramon, Green Valley and Grayson Creeks, in the Walnut Creek basin. These creeks are tributaries to the Walnut Creek Project improvements already constructed by the Corps of Engineers. It is hoped that the feasibility study will yield projects to solve the current overbank flooding that exists in the urbanized areas adjacent to these creeks.

Wildcat-San Pablo Creeks

The allocation of $1,800,000 will fund the remaining construction wrk in the Phase I portion of the Corps of Engineers flood control project on Wildcat and San Pablo Creeks. With completion of this work, the lower portions of the Wildcat-San Pablo creeks will provide 100-Year storm protection for the adjacent urbanized areas which flooded four times in 1982 and five times in 1983.

The project area has suffered for many years from the frequent flooding from these creeks. The County's efforts to rejuvenate the area by improving the housing stock and attracting industry have been of marginal success due to the absence of adequate flood protection. With completion of the above work, the improvement in the quality of life for the residents in this area can be achieved. On behalf of them, as their local supervisor, I want to express my personal thanks to you for your support.

AUBURN-FOLSOM SOUTH UNIT

PREPARED STATEMENT

Senator JOHNSTON. Thank you.

Mr. HILL. Thank you very much, John.

The East Bay Municipal Water Utility District's statement has been filed for inclusion in the record.

[The statement follows:]

STATEMENT OF EAST BAY MUNICIPAL UTILITY DISTRICT

The East Bay Municipal Utility District, which supplies water for municipal and industrial uses to 1.1 million people in a 300-square-mile area of Alameda and Contra Costa Counties on the eastern side of San Francisco Bay, supports the California Water Commission's recommendations regarding appropriations for Federal Flood Control and Reclamation Programs in California for fiscal year 1988-89.

Specifically, the District urges appropriation for the following project (reference California Water Commission Summary dated March 11, 1988.)

No. 47 Auburn-Folsom South Unit $1,700,000

The District has a twofold interest in the completion of the Auburn-Folsom South Project: first, as a contractor for project water; and second, as an indirect beneficiary of water imported to that portion of the Folsom South Service area which lies downstream from the District's primary water source reservoirs in the Mokelumne River basin.

Extensive groundwater pumping in the vicinity of the lower Mokelumne River is causing substantial seepage loss, much of which must be replaced by releases of water stored by East Bay Municipal Utility District for its own use. As these seepage losses increase, the dependable yield of the District's Mokelumne River Project is reduced proportionately. Since the Mokelumne River Project supplies more than 90 percent of the District's water, the project yield is of major concern.

For more than thirty years, the expected solution to this problem has been an imported surface supply from the Auburn-Folsom South Project. San Joaquin County agricultural interests along the lower Mokelumne River have also looked to this project to meet their long-term water requirements. Currently the District provides storage, on an interim basis, to some of these agricultural interests. Without the Auburn-Folsom South Project, their water requirements will eventually have to be met from groundwater. Since the groundwater basin is already classified as critical, increased pumping on that basin can only result in accelerated decline in the groundwater table. This consequence could prove disastrous tc agriculture and local communities.

The U. S. Bureau of Reclamation is proposing to resume long-term contracting of available and uncommitted water from the Central Valley Project (CVP). Agencies and cities within the American River Service Area have made requests for 610,000 acre-feet of water per year from the CVP. Of this amount, 270,000 acre-feet has been requested by agencies within San Joaquin County. The City and the County of Sacramento are planning to use almost 500,000 acre-feet of American River water each year.

The District believes it is most important that the Auburn-Folsom South Unit of the Central Valley Project be constructed at the earliest possible date. Auburn Dam, when completed, will significantly reduce the likelihood of flooding in the Sacramento area. Auburn would also provide additional storage to maintain the downstream flow requirements established for the lower American River by the State Water Resources Control Board. California has long taken pride in its multi-purpose water facilities. Since there are a variety of beneficial uses which can best be met in the future by a multi-purpose facility at Auburn, the project should not be structured in a manner which precludes future water storage, power production, recreational use, etc.

For the above reasons, East Bay Municipal Utility District seeks your Committee's support for this project.

TEHAMA-COLUSA CANAL, CALIF.

STATEMENT OF GERALD FIDLER, MANAGER, TEHAMA-COLUSA CANAL AUTHORITY

Mr. HILL. Our next speaker is Gerald Fidler, manager of the Tehama-Colusa Canal Authority.

Mr. FIDLER. Mr. Chairman, my name is Gerald R. Fidler and I am the manager of the Tehama-Colusa Canal Authority. The authority is going to take over the operation and maintenance of the Tehama-Colusa Canal and the Corning Canals in the Central Valley project.

We ask you to help pass an appropriation act to the President's budget for $44,959,000 for the operation and maintenance of the Central Valley project. We are behind that endorsement entirely.

The authority also recognizes the need for the additional funding in the amount of $8.6 million for the rehabilitation of water delivery facilities, the construction of a Shasta Dam temperature curtain, and the restoration of spawning gravel in the Trinity River. These items would result in water conservation and would enhance the fisheries.

We request that you approve both of these requests. We are deeply appreciative of the past assistance given by your entire committee and you, as the chairman, for the appropriations of both canal and distribution system's construction.

Thank you.

[The statements follow:]

STATEMENT OF GERALD R. FIDLER, MANAGER, TEHEMA-COLUSA CANAL AUTHORITY

The United States Department of Interior, Bureau of Reclamation has entered into negotiations with the Tehama-Colusa Canal Authority for the transfer of the responsibility for operation and maintenance of the Tehama-Colusa and Corning Canals to the water users. These Canal service areas, units of the Central Valley Project, have been operated and maintained by the Bureau of Reclamation since they were constructed.

It is the intention of the Tehama-Colusa Canal Authority to pursue the goal of the take over date of October 1, 1988. Since the Tehama-Colusa Canal Authority has not been able to generate its own operating budget for the 1988-1989 fiscal year, and the budget is a negotiable item under consideration, it must rely upon the accuracy of the projections of need as indicated by the President's Budget for fiscal year 1988-89.

The Tehama-Colusa Canal Authority is concerned that inadequate appropriations for Operation and Maintenance of these canal systems might well make it impossible to operate either the Tehama-Colusa or the Corning Canal. We are further concerned that delays in funding much needed canal maintenance could well result in deterioriation that would effect the ability to deliver irrigation water.

The funding needed for the Tehama-Colusa Canal Authority operation and maintenance, we have been assured by the Bureau of Reclamation, is contained in the $44,959,000 for the Operations and Maintenance Programs-Central Valley Project in the President's Budget. The Tehama-Colusa Canal Authority fully supports the $44,959,000 and requests your approval of the appropriation.

In addition, the Tehama-Colusa Canal Authority recognizes the need for additional funding in the amount of $8,600,000 for much needed rehabilitation of existing water delivery facilities as well as for the construction of a Shasta Dam Temperature Curtain and for the restoration of Spawning gravel in the Trinity River Channel. Both of the latter items would also result in the conservation of water and the restoration of conditions that would enhance fisheries. Other needs of the Central Valley Project include funding for the completion of the Water Marketing Environmental Impact Statement, the Consolidated and Expanded Place of Use Environmental Impact Statement and the Processing of Excess Land Appraisals.

The Tehama-Colusa Canal Authority respectfully requests your approval of the President's request of $44,959,000 as well as for an additional $8,600,000.

The people in the service areas of the Tehama-Colusa and Corning Canals are deeply appreciative of the past assistance given by your committee for appropriations for both canal and distribution system construction.

STATEMENT OF SACRAMENTO VALLEY WESTSIDE CANAL ASSOCIATION

The Sacramento Valley Westside Canal Association (Association) hereby reaffirms its support for completion of the Tehama Colusa Canal system and the delivery of Central Valley Project water to all districts within the authorized service area. In this regard, the Association unanimously supports FY 88-89 Appropriations of $5,231,000 for the U.S. Bureau of Reclamation, Sacramento River Division. The funding for completion of the modifications to the headworks and fish facilities for the Tehama Colusa Canal diversion and preconstruction activities for water supply and storage associated with the completion of the Tehama Colusa Canal and Oat Reservoir is critical to the ongoing operation of the project.

Your committee's recognition and consideration of the Association's request is appreciated.

ADDITIONAL STATEMENTS SUBMITTED FOR THE RECORD

Mr. HILL. Thank you very much.

Mr. Chairman, the statement of Tom Powers, supervisor of Contra Costa County, has been filed, as have Alex Ferreria, supervisor, Placer County, and Larry Bagley, mayor of Oceanside. I would ask that those and any other that I may have missed be included in the record.

Senator JOHNSTON. All of those will be made part of the hearing record.

[The statements follow:]

STATEMENT OF PLACER COUNTY (CALIF.) BOARD OF SUPERVISORS

INTRODUCTION:

The Corps of Engineers is about to begin preparation of a Feasibility Study of flood control measures for the American River watershed. This study is estimated to take 28 months and cost $2 1/2 million, one-half of which must come from the State of California and other participating local agencies. Placer County's indicated share in the cost is $27,000. On April 5, 1988, the Placer County Board of Supervisors agreed to participate with the condition that a clear and strong policy statement be included that describes the county's position on this matter.

POLICY STATEMENT:

1. Placer County fully supports a multi-purpose dam on the American River and strongly believes that a multi-purpose facility is in the best interests of the people of California, because it will provide for the long term demand for water and power as well as providing immediate flood control and recreation benefits.

2. Placer County opposes any effort to designate any portion of the land already acquired for the Auburn Dam as a national recreation area, or any other such designation that could possibly hinder the construction of a multi-purpose dam.

3. Placer County is adamantly opposed to a single purpose dam at or near the Auburn site for flood control only, as described in the "Plans for Future Study" by the Corps of Engineers. However, Placer County could support a project that provides water to Placer County equivalent to that provided by a multi-purpose facility. This could be a dam with a minimum pool or a project that included provisions for a delivery system to get existing water right water and Central Valley Project contract water to Placer County. An example of such a system is described in Exhibit "A" attached.

4. If it appears at any time, that the Corps of Engineers Feasibility Study will suggest that a single purpose dam be constructed, Placer County will withdraw its support and use whatever remedies are available to halt or redirect the project.

5. Placer County insists that a multi-purpose dam be included with other alternatives.

EXHIBIT "A"

PLACER WATER PROJECT

In the 1960's, the planning for Auburn Dam was in full swing and it was generally considered that the dam would be constructed in a timely manner.

At the same time, in order to provide additional water for Placer County, the Placer County Water Agency (PCWA) constructed it's Middle Fork American River Project. This project had long been planned, and initially included a dam for annual storage at American Bar. The U.S. Bureau of Reclamation (USBR) negotiated with PCWA to eliminate American Bar Dam because it would be in the lake formed by the

proposed Auburn Dam. In return, the USBR allocated to PCWA an amount of Central Valley Project (CVP) water equal to the water lost by not having the American Bar Dam in the Middle Fork Project.

The Middle Fork Project included the Auburn Tunnel which would have conveyed water from the proposed Auburn Reservoir to Auburn Ravine and thence to Placer County. However, without the Auburn Dam, the inlet portal of the tunnel is high and dry, and the three mile long, twelve foot diameter tunnel has been essentially useless for over two decades. In order to use the tunnel without the Auburn Dam, an expensive pumping plant and vast amounts of energy will be required to lift water from the river below.

Placer County, in cooperation with some interested landowners, has jointly financed an engineering investigation to determine alternatives that would serve as a substitute for the Auburn Dam and Auburn Tunnel to convey water to the appropriate service areas. A substantial investment has been made over the past three years to support this effort.

The most promising plan to bring water to Placer County appears to be one with a Folsom Reservoir diversion and a large diameter transmission pipeline, generally following the Western Area Power Authority (WAPA) power line right-of-way, northwesterly to the service area. Preliminary contact has been made with the U.S. Bureau of Reclamation and the Department of Energy regarding diversion from Folsom Dam and use of the right-of-way. A pumping plant would be required for Folsom Reservoir levels below Elevation 415, and is estimated to cost $4,000,000. If Folsom Reservoir can be held above Elevation 415, no pumping plant would be needed.

It is possible that the diversion works would be shared and jointly financed with a proposed multi-district project, now under study to provide potable surface water to a large area northeast of Sacramento. The transmission pipeline would be eight feet in diameter from Folsom Dam to the service area (approximately ten miles). Additionally, PCWA would require a minimum water supply of 50 cubic feet per second to be pumped from the river to the Auburn Tunnel, to serve higher ground in the Auburn area.

The works described above would be necessary to provide water from the Middle Fork Project to the portions of Placer County which would have been served through the Auburn Tunnel upon completion of Auburn Dam as authorized. A reconnaissance estimate of the cost of these works to make Placer County "whole" again is $57,900,000, and the county respectfully requests that the U.S. Federal Government provide financing for the construction thereof. The facilities are indicated on the attached map, and the cost is itemized below.

In addition, PCWA requests re-affirmation of the annual 117,000 acre-feet of CVP water received from the USBR by negotiation in return for dropping American Bar Dam from the Middle Fork Project, and 19,000 MWH annually from WAPA, or the right to purchase same at the WAPA price of approximately 35 mils per kwh.

RECONNAISSANCE ESTIMATE OF COST OF FACILITIES TO MAKE PLACER COUNTY "WHOLE" WITH NO AUBURN DAM:

Outlet works from dam, including pumping plant	$ 9,700,000
Transmission pipeline to service area	30,200,000
Pumping plant for PCWA at Auburn Tunnel	4,000,000
Total Construction:	$43,900,000
Right-of-way, engineering, contingency.(32%)	14,000,000
TOTAL COSTS:	$57,900,000

The distribution for agricultural water is proposed to be financed by a loan from the USBR, pursuant to Public Law #984. It is estimated to cost $7,200,000, and repayment of its financing is to be made by the landowners.

STATEMENT OF THE MID-VALLEY WATER AUTHORITY

OFF-STREAM STORAGE

My name is George D. McKean and I am chairman of the Board of Directors of the Mid-Valley Water Authority. I am appearing today in support of the Off Stream Storage study being conducted by the Bureau of Reclamation. This study has been funded in prior years, but was not allocated funds in the President's budget for Fiscal Year 1988-89.

My purpose before the Committee is to request that $475,000 be included in the FY 1988-89 budget. Without these funds, we will not be able to continue the orderly development of the Offstream Storage Project.

PURPOSE

The purpose of the Offstream Storage Investigation is to define one or more offstream water storage sites in the San Joaquin or Sacramento Valleys that will provide additional firm CVP water supply and increase the flexibility of current and future water delivery systems consistent with operations of the Central Valley Project and the State Water Project.

The U.S. Bureau of Reclamation (USBR) is working jointly with the California Department of Water Resources (DWR) and the U.S. Army Corps of Engineers (USACOE) in the development of the Offstream Storage Study. The DWR will provide 50-percent of the costs of the study with in-kind services.

STUDY SITES

Sacramento Valley

"Sites Reservoir" on Funks and Stone Corral Creeks in Colusa and Glenn Counties.

San Joaquin Valley

Contra Costa County
"Kellogg Reservoir" on Kellogg Creek
"Los Vaqueros Reservoir" in the upper Kellogg Creek watershed.

Stanislaus County
"Orestimba Reservoir" on Orestimba Creek

Merced County
"Los Banos Grandes Reservoir" on Los Banos Creek

Tulare County
"Yokohl and Mehrten Reservoirs" on Yokohl and Mehrten Creeks Tributary to the Kaweah River
"Hungry Hollow Reservoir" on Deer Creek
"Wilcox Creek Reservoir" on Wilcox Creek Tributary to Cottonwood Creek/Kaweah River

STUDY STATUS

The Bureau of Reclamation held three public meetings in 1986 on June 10 (in Willows), June 11 (in Concord), and June 12, (in Visalia). Other than a response summary of the public meetings in August, 1986, no additional reports have been issued by the Bureau.

APPROPRIATIONS

General Investigation funds for the Bureau of Reclamation included $363,000 for the Offstream Storage Investigation during fiscal year 1988 but no funds have been included in the 1989 budget.

The Bureau has the capability of expending $475,000 during the 1989 fiscal year for completion of their analysis of the alternative storage sites, preparation of a planning report and for development of the required environmental documentation and we hereby request that the Committee include the $475,000 in the budget for Fiscal Year 1988-89.

I appreciate the privilege of appearing before the Committee and respectfully urge your support and ask that my statement be made a part of the hearing record.

SAN JOAQUIN VALLEY CONVEYANCE STUDY

My name is George D. McKean and I am Chairman of the Board of Directors of the Mid-Valley Water Authority. I am appearing today in support of the continued funding of the Bureau of Reclamation planning study identified in prior budgets as the San Joaquin Valley Conveyance Study. This study has been funded for several years and is nearing completion.

My purpose before the Committee is to request that funds be retained in the Fiscal Year 1988-89 budget in an amount not less than $150,000, as currently provided in the President's Budget. Without these funds, we will not be able to continue the orderly development of the Mid-Valley Canal Project.

PURPOSE AND AUTHORITY

The purpose of the San Joaquin Valley Conveyance Investigation is to evaluate the economic feasibility of alternative routings of conveyance (canal) facilities for the importation of additional CVP water supply into the Valley for alleviation of the existing 1.0 million acre-feet of groundwater overdraft. The study has as a corollary objective enhancement of fish and wildlife resources.

The study is being conducted in cooperation with the State of California, Department of Water Resources and the Mid-Valley Water Authority.

The San Joaquin Valley Conveyance Investigation is being conducted under the East Side Division Authorization Act of September 7, 1964, P.L. 89-561 and was initiated in October, 1984.

STUDY AREA

The study area lies within the San Joaquin Valley covering portions of Merced, Madera, Fresno, Tulare, Kings and Kern Counties and contains approximately 3-million acres.

STUDY STATUS

A Status Report of the San Joaquin Valley Conveyance was released by the Bureau of Reclamation in December, 1986. The Report identified seven (7) alternative projects for the delivery of 550,000 acre-feet per year of

supplemental water supply to the Valley. The water supply was composed of 300,000 a.f. of firm yield and 250,000 a.f. of interim project water until year 2020. Intermittent project water supply would also be phased into the project with an average annual quantity of 125,000 a.f.

The Benefit-Cost ratio for the selected alternative was determined to be 1.08:1.00 without consideration of staging the construction of the project.

The selected alternative utilizes available capacity in the California Aqueduct from the Delta to O'Neill Forebay, enlarges the existing Delta-Mendota Canal from O'Neill Forebay to the Mendota Pool and provides for the construction of two new canals from Mendota Pool. The North Branch (500 cfs) would be constructed from the Mendota Pool to the Chowchilla River and the Main Branch (1500 cfs) would be constructed from the Mendota Pool to the White River with alignment near State Highway 99. The initial phase, Main Branch from the Mendota Pool to the Kings River at Highway 99, would cost about $200 million.

The final Feasibility Report and Environmental Impact Statement for the San Joaquin Valley Conveyance Investigation are scheduled to be completed in April, 1988.

LEGISLATION

Congressmen Lehman, Pashayan, Coehlo and Thomas introduced HR572 and Senators Cranston and Wilson introduced an identical bill S.608, early in 1987, for the authorization of the construction of the Mid-Canal Unit of the Central Valley Project. The Bills currently remain in Congressional Committee.

The Water and Power Resources Subcommittee of the House Interior and Insular Affairs Committee conducted a field Hearing on H.R. 572 in Madera, California, on May 15, 1987.

The Mid-Valley Water Authority is urging the movement of the Bills through the Congress during this session.

APPROPRIATIONS

General investigation funds for the Bureau of Reclamation included $450,000 for the San Joaquin Valley Conveyance Investigation during fiscal year 1988 and the President's Budget for fiscal year 1989 includes $150,000. I request the continued support of the Committee in retaining the $150,000 as provided in the President's budget for Fiscal Year 1988-89.

I appreciate the privilege of appearing before the Committee and respectfully urge your support and ask that my statement be made a part of the hearing record.

STATEMENT OF THE KINGS RIVER CONSERVATION DISTRICT

My name is George D. McKean and I am President of the Board of Directors of the Kings River Conservation District. I am appearing today in support of the continued funding of the Pine Flat Dam, Kings River study being conducted by the Corps of Engineers.

My purpose before the Committee is to request that funds be retained in the Fiscal Year 1988-89 budget in an amount not less than $250,000, as currently provided in the President's Budget.

Purpose and Authority

The purpose of the Pine Flat Dam, Kings River study is to evaluate the economic feasibility of raising the height of the existing Pine Flat Dam to provide additional storage capacity in Pine Flat Reservoir for water conservation, flood control and other benefits. The study is being conducted under the 1944 Flood Control Act, P.L.78-534.

Background

The existing Pine Flat Dam is a multipurpose concrete-gravity structure, 429 feet high and 1820 feet long, completed in 1954 by the U.S. Army Corps of Engineers. The construction of Pine Flat Dam was authorized by the 1944 Flood Control Act, P.L. 78-534. The reservoir has a capacity of 1,000,000 acre-feet at gross pool and extends about 20 miles upstream from the dam. The reservoir area covers about 6,000 acres. The Dam is located on Kings River approximately 23 miles east of Fresno, California.

Pine Flat Dam regulates irrigation water and provides flood protection to the Kings River service area of the Kings River Conservation District.

This service area, located below Pine Flat Dam to the southwest, is part of the San Joaquin Valley in central California. Bounded by the San Joaquin River to the north, by an area just west of Fresno Slough to the west and by the south rim of Tulare Lake Basin to the south, it includes the cities of Fresno, Clovis, Hanford, Corcoran, Selma, Fowler, Kingsburg, Sanger and Dinuba and surrounding lands in the foothills of the Sierra Nevada to the east.

Developments within the Kings River Basin began in 1951, with the start of construction of Pine Flat Dam. On the North Fork Kings River, the Pacific Gas and Electric Company constructed reservoirs and related hydroelectric facilities in the late 1950's.

Existing recreation facilities along the shoreline of Pine Flat Reservoir were jointly developed by the Corps of Engineers and the U.S. Forest Service. These include boat launch marinas, camping sites and picnic grounds. Along the stretch of the Kings River immediately below Pine Flat Dam are three recreation areas. The Pine Flat Recreation Area contains 174 acres; Choinumni Park, 170 acres and Winton Recreation Area, 26 acres. They are all operated by the Fresno County Parks and Recreation Department.

Additional Need

Pine Flat Dam and Reservoir have provided substantial benefits to the Kings Rivers Conservation District service area in the form

of flood control, water conservation and recreation. However, even with the 1,000,000 acre-feet of storage capacity provided by Pine Flat Reservoir, the average annual loss of irrigation water due to flood releases from Pine Flat Reservoir is 224,000 acre-feet. In addition to the loss of water, these heavy flood releases cause flooding and seepage problems downstream of Pine Flat Dam. If found to be feasible, the raising of Pine Flat Dam would provide additional water conservation and flood control benefits to the service area.

Study Status

The Corps of Engineers area currently conducting a reconnaissance level feasibility study of raising Pine Flat Dam by approximately 20 feet.

This increase in the height of Pine Flat Dam would increase the storage capacity of Pine Flat Reservoir by 120,000 acre-feet. The study has just started and will take 1 year to complete.

Appropriations

An appropriation of $300,000 was included in the budget for Fiscal Year 1987-88 and will be sufficient funding through September 1988. The President's Budget for Fiscal Year 1988-1989 contains $250,000 for this study, which will be sufficient for the Corps of Engineers to complete the study, approximately 1 year from now.

Mr. Chairman, I appreciate the privilege of appearing before the Committee and respectfully urge your support and ask that my statement be made a part of the hearing record.

STATEMENT OF CITY OF OCEANSIDE, CALIF.

For a number of years I have come before this Subcommittee asking for funding for the San Luis Rey River Flood Control Project. As a result of your support, this vital project will begin construction in July of this year.

The Corps of Engineers' design for the San Luis Rey River Flood Control Project successfully balances the need for flood protection to over 4,000 homes and businesses with property owner needs and environmental requirements. In the process of attaining these objectives, the Corps of Engineers has increased the flood protection afforded by the project, enhanced the environmental features of the project, reduced land requirements, and decreased the overall project costs. The City of Oceanside commends the U. S. Army Corps of Engineers for their leadership in making those changes.

I urge the Subcommittee to approve the Administration's recommendation for $6.2 million in continuing funding for this project for FY89. We look forward to a continuing partnership with the Federal Government in bringing this important project to fruition.

STATEMENT OF THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

The Metropolitan Water District of Southern California supports and endorses the recommendations of the California Water Commission for federal funding of water and flood control programs for fiscal year 1988-1989. Of key interest to Metropolitan is the Bureau of Reclamation's (Reclamation) proposed funding for the demonstration project lining of the All American Canal's Coachella Branch and the related funding for advance planning for the All American Canal lining. The lining projects for the All American Canal and its Coachella Branch would conserve approximately 100,000 acre-feet per year of Colorado River water lost to seepage in the desert. This conserved water would supply the needs of about 500,000 people within Metropolitan's service area, which has a population of nearly 14 million.

In November 1987, Reclamation executed an agreement with the Coachella Valley Water District and Metropolitan for the funding of the demonstration project. Coachella and Metropolitan, in the contract, agreed to advance funds for 50 percent of the costs, and Reclamation would provide the other 50 percent of the funding. Coachella would advance 10 percent and Metropolitan 90 percent of the non-federal 50 percent share. Congress approved funding in December 1987 for the initial $500,000 of the $2.1 million federal share. The Administration's budget for fiscal year 1988-89 includes the remaining $1.6 million. Metropolitan endorses the Administration's proposed funding of $1.6 million for the demonstration project lining and the continued funding of $116,000 for advance planning of the All American Canal lining for fiscal year 1988-89. The demonstration project has potential widespread benefits in the western United States if the technology is proven to be successful.

The lining of the federal earthen canals in the California desert is of such importance to Metropolitan that we are willing to finance 100 percent of the costs of the two canal lining projects. The Subcommittee on Water and Power Resources of the House Interior and Insular Affairs Committee held an oversight hearing on the All American Canal lining on February 23, 1988. Congressman Mel Levine has introduced H.R. 3988 to authorize the lining of 68 miles of the All American Canal and its Coachella Branch with 100 percent non-federal funding. Metropolitan strongly supports H.R. 3988.

Other Reclamation funding of particular interest to Metropolitan that we would like to specifically highlight are:

1. Central Valley Project (CVP) Delta Water Management Program;

2. Colorado River Basin Salinity Control Program;

3. Applied Weather Modification Research; and

4. Coleman National Fish Hatchery.

CVP Delta Water Management Program. Reclamation has $1.9 million proposed for the San Francisco Bay-Delta monitoring and research support programs for the fiscal year 1988-89. We feel this is an appropriate level of funding to meet Reclamation's obligations in compliance with their State

of California water rights permits. Since 1974, Reclamation has not conducted or funded the routine water quality compliance monitoring program required by such permits. This program has been funded solely by California's Department of Water Resources.

Colorado River Basin Salinity Control Program. Metropolitan supports the Colorado River Basin Salinity Control Advisory Council's recommendations on funding for the Colorado River Basin salinity control program. In accordance with the Clean Water Act, numeric criteria have been set for Colorado River salinity below Hoover and Parker Dams, and at Imperial Dam. Meeting the numeric criteria will require the continued implementation of the salinity control program. We are concerned that the Administration's proposed budget includes no funds for the Department of Agriculture's on-farm salinity control program. We urge that Congress provide $8 million for this cost-sharing program for continued efforts in Colorado, Utah, and Wyoming.

The Administration's proposed budget for the Department of the Interior's salinity control program contains no funds for advance planning on two salinity control units--the Lower Virgin River in Nevada and Uinta Basin in Utah. Congressional funding at $300,000 and $500,000 respectively would allow these programs to move forward. Neither have funds been proposed for construction activities associated with the Las Vegas Wash Unit in Nevada and the Lower Gunnison Unit in Colorado. We recommend that Congress include $50,000 and $5 million respectively. Failure to begin construction of the cost-effective Lower Gunnison Unit in 1989 will discourage local participation. Finally, we would suggest that the Administration's proposed budget for the Grand Valley and Paradox Valley units be augmented by $1.3 million and $300,000 respectively.

Applied Weather Modification Research. Metropolitan is greatly concerned with the absence of funding in the Administration's proposed budget for applied weather modification research. Reclamation's Division of Atmospheric Resources Research has a great deal of expertise in this field which should not be abandoned. The Colorado River watershed, from which Metropolitan draws the majority of its water supply, is a candidate for a weather modification program.

Congress recognized that water supplies in the Colorado River Basin would fall short of the needs of the seven states when it passed the Colorado River Basin Project Act of 1968, P.L. 90-537. The Act stated that the satisfaction of the requirements of the 1945 Mexican water treaty from the Colorado River constituted a national obligation--the first of any future water augmentation project. Modifying the weather to increase snowpack in the Colorado River Basin is one way by which the Federal Government can fulfill its obligation.

Water use in the Colorado River Basin is projected to exceed the average annual water supply in the 1990s. It will be necessary to draw water from reservoir storage in years of below normal precipitation to meet all of the basin's needs. Reclamation studies have shown that weather modification would increase the basin's water supply by 1.5 to 2 million acre-feet per year. Confirmation of these studies through demonstration of cloud seeding technology in the Colorado River Basin is necessary.

Reclamation's Division of Atmospheric Resources Research is the appropriate entity to conduct this demonstration in fulfillment of the Secretary of the Interior's responsibility to augment the Colorado River's water supply. Metropolitan concurs with the Colorado River Basin states' recommendation that Congress provide $4 million in 1989 for research and cost-sharing programs for the Division of Atmospheric Resources Research. This multi-state program is best accomplished at the federal level.

Coleman National Fish Hatchery. Metropolitan supports the California Water Commission (Commission) recommendation for federal appropriation of funds to rehabilitate and improve the Coleman National Fish Hatchery. In general, Metropolitan supports efforts to improve the Central Valley salmon populations. Constructed in 1942 to mitigate the damages to salmon spawning areas in the Sacramento River system caused by the construction of Shasta and Keswick Dams, the hatchery has suffered from a variety of operational problems, including insufficient funding, resulting in a reduction of fish production.

The U.S. Fish and Wildlife Service has identified needed facility construction and rehabilitation projects at Coleman totaling $22 million. The funds needed immediately for initial improvements are $6.5 million. Additional improvements needed in the near future total $7.2 million. Subsequent improvements of $8.4 million would be deferred until the initial improvements were completed and evaluated.

The Commission supports joint funding between federal and non-federal sources and believes it would be appropriate to apply the Coleman rehabilitation costs for reimbursement on the same basis as they are assigned for Shasta Dam (i.e.: to irrigation and municipal water supplies, power, fish and wildlife, flood control, and other purposes). Funding by the State of California of up to 15 percent of the cost is supported by the Departments of Water Resources, Fish and Game, and the Commission, provided that the Coleman Hatchery project is part of an overall salmon restoration program for the upper Sacramento River and tributaries.

STATEMENT OF SONOMA COUNTY WATER AGENCY

Mr. Chairman and Members of the Subcommittee -- I am Robert F. Beach, General Manager of the Sonoma County Water Agency (State of California). We urge that the Subcommittee include the sum of $1.65 million in the proposed budget for the Warm Springs Dam - Lake Sonoma Project in Sonoma County, California.

For the past twenty-six years we have annually represented to you our support for the Warm Springs Dam Project. We have recounted floods and droughts and described the benefits that would flow from the completion of this project. Those benefits are now a reality. The U. S. Army Corps of Engineers closed the outlet works gates and began deliberate impoundment of water three years ago last November. During the massive rainstorms that swept Northern California two years ago, the project demonstrated its flood control value by reducing what was nevertheless a record flood stage in the lower Russian River by several feet, preventing enormous additional damage.

In 1959, at the time Coyote Valley Dam was constructed, it was believed that the higher Russian River streamflows that would result from the project would mitigate the loss of steelhead spawning and rearing areas which were cut off by the dam. As a result, no fish hatchery or other mitigating facilities were included in the project. It soon became evident that because of high water temperatures and other reasons, the anticipated benefits would not be realized.

For many years the lack of mitigation for the steelhead loss has been a matter of concern to the California Department of Fish and Game, conservation groups, and others. In 1974, Public Law 93-251 was enacted which authorized and directed the Corps of Engineers to compensate for fish losses in the Russian River attributed to the operation of the Coyote Valley Dam as part of the Warm Springs Dam Project, through measures such as expansion of the Don Clausen Fish Hatchery. The hatchery was subsequently constructed with space to accommodate additional incubators and associated equipment for a mitigation project.

In 1983, a study was authorized to define the required steelhead mitigation for the Coyote Valley Dam Project. The Corps of Engineers determined that the annual production of 4,000 adult steelhead trout was necessary. The Corps also determined that the

most appropriate method would be an expansion of the Don Clausen Fish Hatchery at Warm Springs Dam and the construction of new trapping, egg-taking, and imprinting facilities at Coyote Valley Dam. The total cost of these facilities is estimated to be $3.3 million.

The Sacramento District has prepared the design memorandum, environmental assessment, and other documentation and requires $900,000 in the FY 1989 Warm Springs Dam Project budget to begin the hatchery expansion. Because the question regarding the method of providing for the local share of the project costs was under review by the Office of the Chief of Engineers, money was not included in the President's FY 1989 budget request for this project. The Agency has since been advised by the Corps of Engineers that the local costs will be shared under the existing 1982 First Amended Contract for Water Storage Space in Warm Springs Dam and that no separate cost share agreement will be required.

We, therefore, request that the Subcommittee support the addition of $900,000 to the amount included in the President's FY 1989 budget request for this project for a total of $1,650,000. We appreciate the support the Warm Springs Dam Project has received from this Subcommittee over the years.

CLOSING REMARKS

Mr. HILL. Unless I have goofed, that concludes our testimony and we thank you very much.

Senator JOHNSTON. Thank you very much, Mr. Hill.

I think you are aware of our problem with money and the fact that your collective request exceeds the amount which we expect to be available by a considerable amount, but we will certainly do the best we can.

Mr. HILL. We are well aware of that. We have been pretty thoroughly informed. We have discussed it with your staff and others, and we recognize the budget constraints. We are very pleased that you have given us the consideration you have, and thank you.

Senator JOHNSTON. Thank you.

Finally, we have Dan Dobbins, department coordinator for the executive division of South Carolina Wildlife and Marine Resources Department, accompanied by Ed Duncan, environmental coordinator of the same department.

RICHARD B. RUSSELL DAM, S.C.

STATEMENT OF DAN DOBBINS, DEPARTMENT COORDINATOR, EXECUTIVE DIVISION, SOUTH CAROLINA WILDLIFE AND MARINE RESOURCES DEPARTMENT

ACCOMPANIED BY ED DUNCAN, ENVIRONMENTAL COORDINATOR

Mr. DOBBINS. Thank you, Mr. Chairman.

My name is Dan Dobbins. I am the department coordinator for the South Carolina Wildlife and Marine Resources Department.

Our department is appearing before the subcommittee this afternoon requesting that further appropriations be withheld, and the project implementation of pump storage facilities at the Richard B. Russell Dam be postponed until studies presently underway can be completed and until the Corps of Engineers has completed and released the supplemental environmental impact statement now being prepared dealing with this same issue.

The Richard B. Russell Dam and Lake was authorized by the Flood Control Act of 1966. In that authorizing legislation, Congress specifically stated that nothing in this act shall be construed to authorize inclusion of pump storage power in this project. This act was later amended by the Flood Control Act of 1966 that deleted that language to allow for feasibility studies to be conducted for increased power generation.

Significantly, the 1966 Act, however, did not authorize the installation of pump storage in this project. Consequently, funds were requested and construction efforts commenced without further congressional authorization. The Corps of Engineers in other documents have repeatedly advised the public as well as fish and wildlife agencies that they would not undertake pump storage without additional congressional authorization based on detailed studies.

They have produced environmental impact statements in 1976 and in 1979, and a feasibility report in 1979 for additional pumpback storage.

In these documents they clearly stated that actual future installation of pump storage facilities was to be contingent upon further detailed studies and specific authorization by Congress.

However, in early 1980, the Corps of Engineers then decided that no congressional authorization was required and proceeded with plans to install the pump storage units at a first estimated cost of over $60 million. At this same time, a similar chain of events was occurring at the Harry S. Truman Dam and Reservoir in Missouri. A feasibility report and final supplemental impact statement was prepared for that project in 1980 and they concluded that entrainment of fish inflow through the dam is a probable occurrence, but is not necessarily injurious to fish.

In April 1982, the Kansas City District of the Corps of Engineers initiated testing at the Harry S. Truman Dam. After a 3-hour test run of a single-pump turbine, the pump storage feature in the Truman Dam killed a documented 2,000 pounds of fish. Following the incidents at the Truman project, the Savannah District Corps determined that there were sufficient similarities between the Truman and Russell projects to warrant concern about the impact of pump storage at Russell on the fisheries' resources of Clarks Hill Lake, recently renamed J. Strom Thurmond Lake, which serves as a pump pool for Russell.

They contracted with the Kansas City District's consultant, Stone & Webster Engineering, to evaluate the potential fisheries' impacts. Stone & Webster concluded that additional detailed fishery studies were necessary on this project.

In April 1985, the Savannah District and Stone & Webster presented the results of their preliminary investigations to us. It was at this time that we first learned of the Truman project. Although the significance of fish entrainment problems at that project were highly understated and essentially dismissed by both the Corps and their consultant, detailed fishery studies were initiated by the Corps at Richard B. Russell in February 1986.

While these studies are all incomplete, the data does show that large numbers of important sport fishes and forage fishes concentrate in the tailrace at Richard B. Russell throughout the year and would be subject to entrainment for that project to begin operation.

As these studies have progressed, our concerns over the potential impact of this project has steadily grown. However, we have relied on the assurance of the Corps of Engineers that fish protection devices would provide protection for the resource. We have since learned, however, that operationally successful fish protection devices do not exist for most applications and are essentially in the experimental stage.

In Kansas City the District's Engineer has determined that, until an adequate fish protection device can be designed and constructed, the pump storage feature at the Truman Dam will not operate. To this day, Mr. Chairman, that facility does not operate.

In 1987, Stone & Webster Engineering presented a report to the Electric Power Research Institute, which concluded that there is no single system or device currently available to protect fish from the ad-

verse effects of reversible pump turbines which is biologically effective, operationally reliable, economically viable, and acceptable by the regulation agencies.

In spite of this assertion, in November 1987, Stone & Webster has since advised the Savannah District Corps of Engineers that a barrier device can be installed in the tailrace of Richard B. Russell. However, no state or federal fish and wildlife agency has been consulted on the design or effectiveness of this proposed barrier. Even the Corps itself, has finally acknowledge that the technology to design an effective fish protection system for Russell does not exist but would have to be developed.

These factors resulted in our formal request to the Corps to delay the installation of the pump-turbine units until these uncertainties could be settled. While the Corps has rejected our request, they have announced in February 1980 their intention to prepare yet another supplement to the final environmental impact statement addressing pump storage.

Currently the Corps continues construction on the pump storage facility with the first turbines scheduled for testing in November 1990. We feel to continue construction and installation of the pump storage facility while preparing a supplement to the final environmental impact statement that is just beginning violates the spirit and the intent of the entire National Environmental Policies Act process.

It is our firm belief that the addition of pump storage to the Richard B. Russell project may well result in significant losses of economically and recreationally valuable fisheries' resources.

We further believe that the Corps of Engineers is proceeding with the addition of pump storage without the necessary congressional authorization and in violation of the National Environmental Policies Act and the Fish and Wildlife Coordination Act.

As of February 1988, only $6.3 million of the estimated $73.7 million needed to add the pump turbines to Richard B. Russell has been extended. We believe that further appropriations should be withheld until the project can be brought into compliance with requirements from NEPA and the Fish and Wildlife Coordination Act, until the studies underway can be completed and a supplemental environmental impact statement be completed.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF THE SOUTH CAROLINA WILDLIFE AND MARINE RESOURCES DEPARTMENT

The South Carolina Wildlife and Marine Resources Department is gravely concerned that the pump storage project being proposed for the Richard B. Russell Dam will result in significant unacceptable losses of fishery resources that are of great economic and recreational importance to our State and the nation.

The South Carolina Wildlife and Marine Resources Department is appearing before the Subcommittee requesting that further appropriations be withheld and project implementation of pump storage facilities at the Richard B. Russell Dam on the Savannah River bordering South Carolina and Georgia be postponed until studies presently underway to evaluate potential fish mortality in relationship to the operation of that project can be completed and until the Corps has completed and released the Supplemental Environmental Impact Statement now being prepared dealing with the same issue. We further request that once these studies are complete, that they be fully assessed by all involved State and Federal natural resources agencies.

BACKGROUND AND HISTORY

The Richard B. Russell Dam and Lake was authorized by the Flood Control Act of 1966. In that authorizing legislation Congress specifically stated that "Nothing in this Act shall be construed to authorize inclusion of pumped storage power in this project...". In October, 1976, Congress enacted the Water Resources Development Act of 1976 which amended the Flood Control Act of 1966 by deleting the language with specifically prohibited pump storage at Richard B. Russell in order to allow feasibility studies to be conducted for increasing power generation. Significantly, that Act did not authorize the installation of pump storage in this project.

Consequently, funds were requested and construction efforts commenced without furhter congressional authorization. The Corps of Engineers in other documents had repeatedly advised the public as well as fish and wildlife agencies that they would not undertake pump storage without additional congressional authorization based on detailed studies.

In 1976 the Corps of Engineers completed a final supplement to the Final Environmental Impact Statement on the addition of pump storage at Richard B. Russell. This document concluded that "The adverse effect which cannot be avoided is the undesirable impact of the destruction or elimination of large numbers of young fish and eggs...". It further stated that pump storage operations "will be curtailed" during the spawning season in order to reduce the loss of fish.

Three years later the Corps of Engineers completed a second Final Environmental Impact Statement on the addition of pump storage at Richard B. Russell. This document, based on the same data used in 1976, concluded that there would be a "...transfer of young fish and eggs..." and that only an "...occasional fish will be hit by pump blades or injured while passing through the pump-turbine units" due to the pump storage operations. They further determined that the impacts to the fishery would not be significant and that no mitigation measures would be warranted.

Both the 1976 and 1979 Final Environmental Impact Statements and the 1979 Feasibility Report for the addition of pump storage clearly stated that the actual future installation of pump storage facilities was to be contingent upon further detailed studies and specific authorization by Congress. And more specifically, in its 1979 Feasibility Report on Richard B.

Russell pump storage, on page 68 of that document in a section entitled "Plan Implementation", the Corps lists the steps that are necessary to implement the plan for inclusion of pump storage.

The report specifically delineates the various steps through the administrative procedure and concludes that the Committees on Public Works of the House and Senate would hold hearings on the report with a view toward formulating a bill including authorization of the recommended project. That report also states that if the project is authorized, engineering and design studies would be initiated which would then be followed by award of contracts and construction. However, in early 1980 the Corps of Engineers decided that no congressional authorization was required and proceeded with plans to install the pump storage units at an estimated first cost of 60 million dollars.

At the same time a similar chain of events was occurring at the Harry S. Truman Dam and Reservoir in Missouri. A Final Report and Final Supplemental Environmental Impact Statement was prepared for that project in 1980 and it concluded that "Entrainment of fish in flow through the dam is a probable occurrence, but is not necessarily injurious to fish." It also stated that "A small percentage of the fish entrained may be damaged, but this is not considered a significant impact." and that "...the net effect of entrainment will be a gain to the downstream fish population."

In April, 1982, the Kansas City District of the Corps of Engineers initiated testing at the Harry S. Truman Dam. After a three (3) hour test run of a single pump-turbine, the pump storage feature in the Truman Dam killed a documented 2,000 pounds of fish. After further testing and much detailed study, the Kansas City District Engineer concluded in 1985 that the Corps would not be able to operate the pump storage facility at Truman because of the lack of feasible technology to adequately protect the fish.

Following the incidents at the Truman Project, the Savannah District determined that there were sufficient similarities between the Truman and Russell projects to warrant concern about the impacts of pump storage at Russell on the fishery resources of Clarks Hill Lake (recently renamed J. Strom Thurman Lake) which will serve as the pump pool for Russell. They contracted with Kansas City District's consultant, Stone & Webster Engineering, to evaluate potential fishery impacts. Stone & Webster concluded that the entrainment mortalities that would occur would not adversely affect the fishery but that data were insufficient to support this conclusion. Initiation of detailed fishery studies was recommended.

In April 1985, the Savannah District and Stone & Webster presented the results of their preliminary investigations to us. They informed us that inhouse "engineering studies" on pump storage at Russell were underway. It was at this time that we first learned of the Truman Project, although the significance of fish entrainment problems at that project were highly understated and essentially dismissed by both the Corps and their consultants.

Detailed fisheries studies, tailrace modeling efforts, and investigations of potential fish protection devices were initiated by the Corps at Richard B. Russell in February 1986. While these studies are all incomplete and subject to much refinement and analysis before any realistic conclusions can be reached and reasonable impact assessments made, the data does show that large numbers of important sport fishes and forage fishes concentrate in the Russell tailrace throughout the year. Species include striped bass, hybrid bass, white bass, largemouth bass, sauger, crappie, catfish, yellow perch, sunfish, shad and blueback herring. All of these species would be subject to entrainment when present in the tailrace during pump back operations.

As the studies have progressed, our concerns over the potential impacts of this project have steadily grown. The data presented by the Corps and their consultants, and the open and frank discussions by the Corps staff from the Truman Project at a May 1987 meeting, heightened our concerns. However, we relied on the assurances of the Corps that fish protection devices would provide protection for the resource.

We have since learned that operationally successful fish protection devices do not exist for most applications and are essentially in the experimental stage. In Kansas City, the District Engineer has determined that until an adequate fish protection device which is operationally reliable, economically feasible and acceptable to regulatory agencies can be designed and constructed, the pump storage feature of the Truman Dam will not be operated. To this day, that facility does not operate.

In 1987, Stone and Webster Engineering presented a report to the Electric Power Research Institute which concluded that there was no single system or device currently available to protect fish from the adverse effects of the reversible pump turbines which is biologically effective, operationally reliable, economically viable, and acceptable by the regulatory agencies. In spite of this assertion in November, 1987, Stone and Webster has advised the Savannah District that a barrier device can be installed in the tail race of Richard B. Russell. However, no state or federal fish and wildlife agency has been consulted on the design or effectiveness of the proposed barrier.

The Savannah District admits that the design and construction of this barrier is "mitigation" for adverse impacts associated with the pump storage project. However, until the Savannah District completes the Supplemental Environmental Impact Statement and a Mitigation Plan addressing <u>all</u> potential adverse impacts, there will be no way to estimate what the economic and environmental costs to the taxpayers will be.

The U.S. Fish and Wildlife Service concluded in a November 1987 report to the Savannah District that:

> "Data from Savannah District's ongoing fish entrainment studies at the Russell project show a clear and unequivocal need for protection of fish in the tailwaters during pumped storage operations. Significant mortalities of many important game and forage fish would occur in the absence of a fish protection system.
> Data received at a recently convened conference of hydropower interests and the nation's (as well as Canada's) foremost experts on fish protection at power plants give little hope that an effective protection system for the Russell pumped storage project can be developed in the near future."

Even the Corps has finally acknowledged that the technology to design an effective fish protection system for the Russell project does not exist but would have to be developed. These factors resulted in our formal request to the Corps to delay the installation of the pump-turbine units until these uncertainties could be settled.

While the Corps has rejected our request, they announced in February 1988 their intention to prepare yet another Supplement to the Final Environmental Impact Statement addressing pump storage. The stated purpose is to discuss the results of the ongoing studies and determine if "further mitigation measures" are appropriate. The mitigation alternatives being evaluated range from full operation with no fish protection devices to no operation of the pump-turbine units. Concurrently, the Corps continue construction on the pump storage facility with the first pump-turbine scheduled for testing in November 1990.

At this point, it is not clear if we have a project that is economically or environmentally feasible considering the current information and the alternative measures being evaluated to mitigate the adverse impacts on fishery resources. The purpose of the National Environmental Policy Act review and Environmental Impact Statement preparation is to fully identify the economic benefits, resource impacts, means and measures necessary to mitigate any impacts and evaluate overall project feasibility in order that reasoned decisions can be made. To continue construction and installation of the pump storage facility while preparation of a Supplemental Final Environmental Impact Statement is just beginning, violates the spirit and the intent of the entire National Environmental Policy Act process.

SUMMARY

It is the firm belief of the South Carolina Wildlife and Marine Resources Department that the addition of pump storage to Richard B. Russell will result in significant losses of economically and recreationally valuable fishery resources and that the citizenry of South Carolina and the public in general will suffer irreparable harm for which they have no adequate remedy at law. Further, we believe that the Corps of Engineers is proceeding with the addition of pump storage without the congressional authorization stated necessary throughout the planning and public review process, in violation of the National Environmental Policy Act and the Fish and Wildlife Coordination Act, and prior to a full and fair consideration of the public interest.

As of February 1988, only 6.3 million dollars of the estimated 73.7 million dollars needed to add the pump-turbines has been expended. Further appropriations should be withheld until the project can be brought into compliance with the requirements of the National Environmental Policy Act and the Fish and Wildlife Coordination Act; the Supplemental Environmental Impact Statement can be completed to adequately identify project impact and the necessary measures to mitigate these impacts; and proper documentation is presented to Congress for their consideration and final decision as to whether this project should be built.

Senator JOHNSTON. Do you know how to mitigate this and have pump storage?

Mr. DOBBINS. The Corps of Engineers has not completed a mitigation study, nor have we entered into the mitigation negotiations, Mr. Chairman.

Senator JOHNSTON. Do you feel like you know the answer or do you think they need to study it to find the answer?

Mr. DOBBINS. We are cooperating with the Corps right now on the studies that they have underway. We feel that these studies need to be complete before we know what the total scope of the problems could be. I think at that point it would be time to begin mitigation. Our concern right now is that we halt construction of the project.

Senator JOHNSTON. I understand you want to halt it now and do the study, but do you think you know how to fix it?

Mr. DUNCAN. No, sir; we do not, no.

Mr. DOBBINS. Not at this time; no, sir.

Senator JOHNSTON. In other words, you think the probable outcome would be to stop pump storage?

Mr. DOBBINS. I am going to ask Mr. Duncan to answer that.

Mr. DUNCAN. At this time, it appears unlikely that there is a feasible solution to the fish entrainment problem, if the studies show that the fish are going to be there in the numbers that the initial work does show.

POSITION OF STATE OF SOUTH CAROLINA

Senator JOHNSTON. Is this the official position of the state of South Carolina?

Mr. DUNCAN. I don't know that the state has adopted an official position. We are an agency of the state of South Carolina and, in our working on this project with the South Carolina Attorney General's office, I don't know that any state position has been sought.

Mr. DOBBINS. It is, however, the official position of the South Carolina Wildlife and Marine Resources Department.

Senator JOHNSTON. Can we take this as the position of South Carolina?

Mr. DOBBINS. I do not think we can speak for the entire state at this point, Mr. Chairman. We would have to go through and develop some sort of a process with the other agencies and through the Governor's Office and, perhaps, even through the general assembly to produce what could be considered a state consensus, I would suppose. We normally leave that——

Senator JOHNSTON. We have a project here that was a reasonably controversial project at the time, difficult to put through and was put through, and now it is public law. You are saying now, on a very plausible good case, that we ought to stop it, and not just stop it to study it but ultimately probably to stop the pump storage.

This may be the appropriate thing to do, I don't know. But, if that is to be done considering the importance of the project and the fact that it was fought for so hard, I think this ought to be at least the official position of the state of South Carolina.

I would hate to go in here and do this thing and then have the Governor say, "Well, why did you do that," and have your two Senators say, "Well, that is not South Carolina's position, that is some group down there that is doing that." Ordinarily, with the wildlife and marine resources, we would not question the fact that is the official position.

So, why don't you go check that and let us know if that is the official position and, if not, what is the official position of the state?

Mr. DOBBINS. We would be happy to do that, Mr. Chairman. We will begin that. As a matter of fact, our commission meets in the morning and we will present that to our commission and begin whatever process seems to be prudent to try to develop an official state of South Carolina position on this issue.

Senator JOHNSTON. I think you should also send copies of your statements to your two Senators here.

Mr. DOBBINS. Yes, sir.

Senator JOHNSTON. Be sure that it is not just something that comes in with the shower of mail, that they really understand what it is you are asking for.

Mr. DOBBINS. We have had meetings with our two Senators and their staffs over this issue, and there has been extensive correspondence between our agency and our two Senators.

Senator JOHNSTON. Do they have a position on this, or do you know?

Mr. DOBBINS. I would not speak for them at this time, sir.

Senator JOHNSTON. Thank you very much.

Mr. DOBBINS. Thank you, Mr. Chairman. We appreciate your interest.

Mr. DUNCAN. Just one other item of interest, the Corps announced in February 1988 that they are going to prepare an environmental impact statement on the Russell pumpback situation. One of the options that they are considering is no operation of the pumpback facility.

That is part of our concern; we have expended $6 million at this point and, in the next 2 years, we are going to expend another $65 million before we decide if they can be operated at all.

Senator JOHNSTON. It is another $65 million to be expended?

Mr. DUNCAN. Yes, sir.

Mr. DOBBINS. That is correct, sir.

Senator JOHNSTON. Has any of that $65 million been committed?

In other words, if we stopped this would we save $65 million or save just a portion of the $65 million?

Mr. DUNCAN. A portion of the $65 million.

Mr. DOBBINS. A portion of it. I think some of it has been committed.

Senator JOHNSTON. How much of it?

Mr. DUNCAN. I have not seen any figures on what is what.

Senator JOHNSTON. Let's find out on it. I understand the units are already on order.

How many megawatts is this, peaking power?

Mr. DUNCAN. Two hundred megawatts. I don't recall right offhand.

Senator JOHNSTON. Thank you, gentlemen.
Mr. DOBBINS. Thank you, Mr. Chairman.

ENERGY RESEARCH PROGRAMS

PREPARED STATEMENTS

Senator JOHNSTON. We had intended to have a session to receive testimony on programs within the Department of Energy, but the schedule precludes that. So, any statements on DOE items will be incorporated in the record at this point.

[The statements follow:]

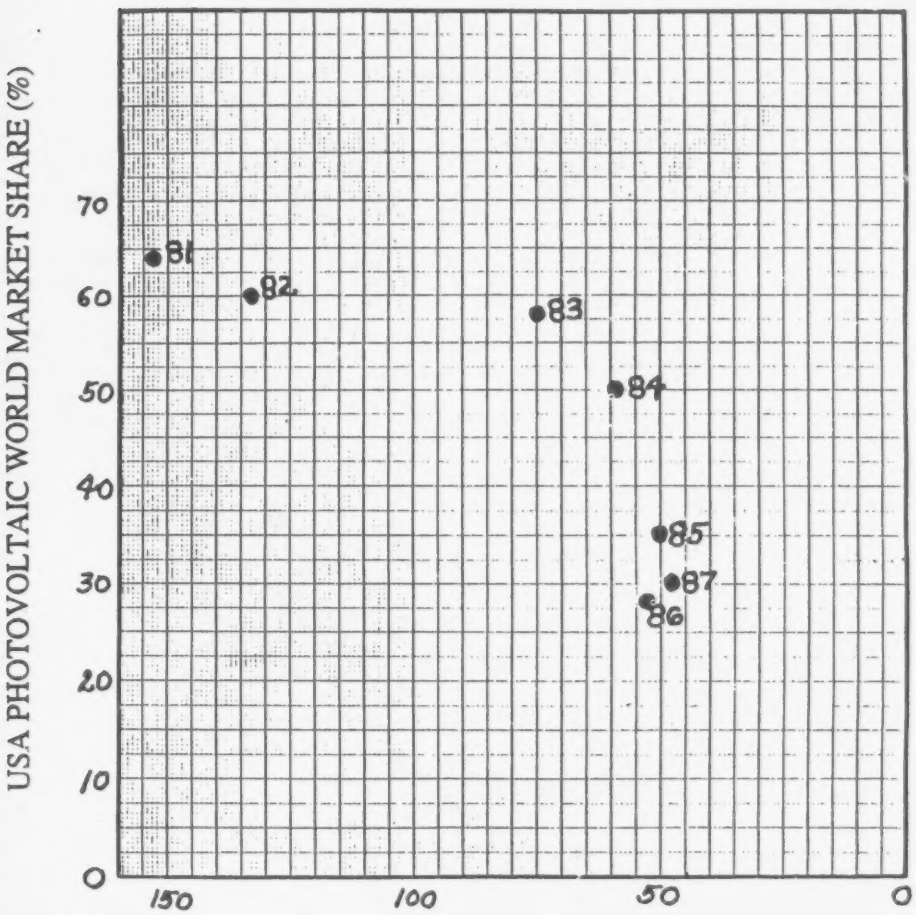
STATEMENT OF R.E. NORBERG, PROFESSOR AND CHAIRMAN, WASHINGTON UNIVERSITY IN ST. LOUIS

I would like to comment upon the Energy Bill, and its impact on the important area of photovoltaic research.

The enclosed figure shows how the United States has lost its world position of preeminence in photovoltaics (PV). As the DOE photovoltaic budget has decreased to $50 million, the USA fraction of the corresponding world market has dropped precipitously. It would be wise to increase the PV budget substantially and to attempt to reclaim some of our previous market position in this important field. Our competitors abroad are increasing their efforts in PV research and development. Their ensuing dominance of the world market will result in another serious trade imbalance for the United States as the inevitable consumption of non-renewable energy resources proceeds.

I urge a significant increase in the FY 1989 PV budget and a majority allocation to research outside government laboratories. The private and university sectors are essential to the effort.

COMPARISON OF USA PHOTOVOLTAIC WORLD MARKET SHARE WITH PRECEDING YEAR DOE PHOTOVOLTAIC BUDGET



STATEMENT OF THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, NUCLEAR ENGINEERING DEPARTMENT HEADS ORGANIZATION

Good afternoon Mr. Chairman and Distinguished Members of the Committee. I am Professor Robert Seale, Head of the Department of Nuclear and Energy Engineering at the University of Arizona. I am also a member of the Nuclear Engineering Department Heads Organization (NEDHO). This organization represents the academic departments and programs in nuclear engineering throughout the country. This organization includes about 40 programs in 29 states. There are 26 accredited programs in nuclear engineering, many offered by the most highly regarded engineering schools in the United States.

I am here today to discuss with you the need for continuing and, indeed, expanding the support of nuclear engineering education by the federal government. Last year the Congress wisely appropriated $5M in the 1988 Department of Energy budget for research and fellowships. These funds serve a very real need and, based on the present plans, will be wisely administered in a timely fashion. Moreover, the availablity of this program provides a signal which highlights the importance of a continued national strength based on an influx to the field of qualified technical contributors for the future. The programs that have been put in place utilizing the funds appropriated include: approximately $2M for new research initiatives; $1M to continue research begun in previous years; $0.75M for new fellowships; $0.25M for support of university research reactors; and, smaller amounts for a National Academy study of nuclear engineering as a discipline and for programs at the National Laboratories involving undergraduate and graduate students and their faculty advisors at National Laboratory facilities.

An important consideration in bringing this nuclear engineering education program to the Congress has been the past record which has seen such support "fall between the cracks" of the federal agencies. Specifically, the National Science Foundation has regarded such research as falling under the purvue of the Department of Energy. Indeed, there is language in some of the legislation of the earlier AEC days which pre-empted nuclear energy related research entirely to the AEC. At the Department of Energy, such requests have faced the double jeopardy of the highly programmatic focus within the Department of Energy and the research dedicated internal competition from the already existing energy research establishment, namely the national laboratories. Based on these two rather different sets of imperatives for the two agencies, there is little surprise that the less constrained and, we believe, uitimately more innovative research in the university community has in the past suffered from benign neglect. Again, it was to remedy this serious gap that the DOE appropriation cited was developed.

Perhaps it is not surprising that much of the more specific criticism of nuclear technology development in this country in recent years has been to the effect that considerable effort has been spent on fine tuning the performance of already defined technology, while less has been spent on the innovation of new applications designed to better utilize the technology.

I should like to review for you briefly the salient features of the programs that are being put in place based on the $5M appropriation in the 1988 DOE budget.

Research

Research is a vital component of the educational experience for young engineers. It is the vehicle for integrating formal academic classroom experience with the opportunity for creative innovation and expression. The results of these research efforts are often brought forward into the various national laboratory and industrial programs in the field. Moreover, funded research opportunities for students allow them to finance a significant part of their education while simultaneously acquiring key elements of that education.

Among the specific research efforts that are presently seeking this support are: those in space power systems needed for the next generation of space technology and exploration; the application of remote systems engineering and robotics to the surveillance and maintenance of operations and safety systems in nuclear power plants, reducing greatly the limitations imposed by personnel radiation

exposure regulations; the critical evaluation of advanced reactor systems to apply the technology to power generation using designs with greater intrinsic safety margins; the alternatives in nuclear waste management including transuranic element options; the use of expert systems in plant operation and diagnosis of power system behavior and plant safety systems; and the effects of radiation on advanced materials, including modern electronic arrays and systems. There is a host of other activities that might be listed as well. All are at the leading edge of the discipline.

To make full use of such programs, it is important to recognize that the creation and maintenance of an effective research program requires time, intellectual commitment, and resources. Where interdisciplinary research is encountered, as in nuclear engineering, the development of a research group tradition of creative interaction is especially important. That atmosphere is not built in a day, nor can it be nurtured and stimulated to high achievement in a climate of boom and bust.

It follows that an important element in research funding is the need to support these programs over the time necessary to allow them to present mature results based on discerning study and evaluation by the participants and their peers. To meet the need to deliver the worthwhile expectation from these research programs, it is necessary to expect to support each research activity over a three-year period at a minimum. Thus, as the research program is brought into place, the $2M kickoff level of support should rise to the neighborhood of $6M.

Fellowships

An important part of the recruiting of highly qualified students into the graduate programs in nuclear engineering is the demonstration of a commitment to meet the need for such individuals through the availability of competitive graduate fellowships. Enrollments in nuclear engineering graduate programs have dropped by one-third from their peak in the mid-1970s to a total of 1,355 in 1986. The drop is due in part to the inability to attract good students to seek an advanced degree in the face of the opportunity for good jobs at high salaries that exists today. At all levels the number of degrees awarded has decreased by as much as 17%. Closer examination reveals that 53% of the Ph.D.s awarded in 1986, for example, were earned by foreign nationals. Perhaps the most successful technology transfer activity of recent years has occurred in the nuclear engineering areas of American universities. This trend is particularly troubling since many of the foreign nationals will return to their own countries and the number of Ph.D. graduates that will be available to the full range of national employers, including industry, the universities, and the National Laboratories, must decline. Many of the senior personnel in the National Laboratories are in the age group between 55-65 and serious continuity questions exist as to the ability to maintain the laboratory capabilities in the future. Within the educational community, 65% of the faculties of the nuclear engineering departments are senior professors, while only 14% are at the assistant professor level. Many faculty members started teaching in the late fifties or early sixties and most certainly our universities will soon be looking for bright, young engineers to meet the needs of the next generation.

There is in fact a tradition for the Department of Energy or its predecessors to support graduate fellowships in Nuclear Engineering and Health Physics. Throughout the 1960s and early 1970s there was a program of fellowships that played a major role in influencing many of the present leaders in this important technology to enter the field. This program was stopped in 1976 and then reinstated by the Office of Nuclear Energy in 1982. In the current academic year there are 20 Fellows in our universities. Ten additional Nuclear Engineering and Health Physics fellowships will be started in 1988. I am told that there are 57 applications for these fellowships and one-half have GPAs of 3.6 or better. These are truly talented individuals with the capacity to make significant contributions to our society. We stand to make a serious error in judgement if the opportunity for them to realize their capacity is not available.

Indeed, a review of the activities of these recent fellowship holders once they complete their degrees reveals a very high return on investment. Sixty percent are employed by DOE or DOE contractors, and 12% by universities. All but one of the 35 graduates are working in an energy related occupation.

The fellowship program is based on competitive awards to students who then make their choice of institution from a list of participating programs. This program needs to be supplemented by a traineeship program under which individual departments can also attract individuals specifically to enter their programs. These individuals can play an important role in strengthening these programs.

The fellowship program has had success in attracting good students and the number of qualified, quality students exceeds the level of support available. Those who have gone through the program have played an important part in meeting the needs for talented personnel in DOE and the nuclear industry. The program should be expanded to accommodate an additional 45 fellows and trainees each year at a cost of $3M.

University Research Reactors

The availability of a research reactor is an important part of most of the major nuclear engineering programs on our campuses. Other programs benefit from having access to a nearby reactor at a national laboratory or research institution. These facilities are important in the educational process for nuclear engineers. They play a role in the instructional program for advanced undergraduate students and also provide a research facility which is used by departments throughout our campuses. As an example, at the University of Arizona, our research reactor has played an identifiable role in the graduate research of faculty and students in departments as diverse as Anthropology and Lunar and Planetary Sciences. Over the past two years, some 20 separate, identified research projects have used time on our reactor. In addition, our facility is made available to other institutions in the region through the reactor sharing program of DOE. All of this, of course, is quite apart from the research that is also being done by students in nuclear engineering. These activities illustrate the usefulness of these facilities as educational tools for a wide range of students.

Most of these facilities were originally built with Atomic Energy Commission sponsorship in the late fifties and early sixties. They are licensed by the Nuclear Regulatory Commission and each operator is individually examined and licensed as well. The maintenance of these facilities at the level of operating readiness and reliability has been the responsibility of the university and of the individual departments. There exists a real and immediate need for support of the operation of the reactors, including the up-grade of facilities and support equipment to maintain the viability of these important facilities.

SUMMARY

The share of our country's electrical generation contributed by the approximately 110 nuclear power plants currently in operation is 18% of the total electric generation. Further, an examination of their performance shows they play an important role in maintaining system reliability through the availability of these plants. Moreover, extensive and strenuous efforts are being made to increase the availability of these plants to make greater use of the capacity that already exists. The importance of competent, trained operating staffs and engineering support organizations in meeting these goals cannot be overstated.

In a somewhat different but distinctly related arena, we see the aging of both the professionals and many of the facilities that have played a major role in our nuclear defense over the years. We recognize that the nature of that nuclear contribution to our defense is changing, but there is really little doubt that the basic requirement will continue to exist--perhaps in a modified role. Effecting these changes will require the efforts of competent technical people.

Thus over a broad spectrum, there is a clear need for an infusion of competent, young engineering talent into the nuclear field. It is important that we recognize this need and take the steps necessary to assure that the basic commitments necessary to meet the internal energy needs of our population and the defense needs of our nation are met. A common feature in both arenas is the role of the nuclear energy professionals, educated in our universities offering nuclear engineering and science education programs.

Our universities need the vigorous support of the nuclear er industry and the federal government to continue to supply these needed nuclear energy professionals. This support must be comprehensive and include fellowship and traineeship support, research and laboratory equipment grants, and assistance for maintaining the university reactors. Thank you.

Requested funds for Nuclear Engineering education and research.

FELLOWSHIPS AND TRAINEESHIPS:

DOE FELLOWSHIPS: Awarded on a national competition
DOE TRAINEESHIPS: Awarded by universities

45 new fellows and trainees
@ $22,000 each for 3 years $ 3.0 M

RESEARCH:

For 30 academic programs containing 300 faculty
and 1300 graduate students

40 research initiatives - 1 to 2 faculty and
several graduate students each
@ $100,000 - $250,000 each program $ 6.0 M

REACTOR SUPPORT:

30 facilities @ $100,000 each	$ 3.0 M

NATIONAL LABORATORY PROGRAMS:

National Laboratory pass-through programs to provide for academic research using National Laboratory facilities in direct support of laboratory programs	$ 2.0 M
TOTAL	$14.0 M

NUCLEAR ENGINEERING ACADEMIC DEPARTMENTS

SUMMARY FACT SHEET

APRIL 1988

NUMBER OF PROGRAMS:

42 PROGRAMS IN NUCLEAR ENGINEERING IN 29 STATES

12 PROGRAMS OF NUCLEAR ENGINEERING AS OPTIONS IN OTHER DISCIPLINES

26 NUCLEAR ENGINEERING PROGRAMS IN 23 STATES ACCREDITED BY THE ACCREDITING BOARD FOR ENGINEERING AND TECHNOLOGY (ABET)

FACULTY

309 FACULTY IN 33 PROGRAMS - AVERAGE 9.4 FACULTY PER PROGRAM

STUDENTS

ENROLLMENTS:	1986	RECENT PEAK	DECLINE IN EIGHTIES
PhD	549	606 (1982)	9.4%
MASTERS	806	951 (1983)	15.2%
UNDERGRADUATE	1344	1701 (1983)	21.0%

DEGREES	1986	RECENT PEAK	
PhD	120	132 (1984)	9.1%
MASTERS	283	342 (1982)	17.2%
BACHELORS	572	692 (1981)	17.3%

RESEARCH REACTORS

16 UNIVERSITIES OPERATE RESEARCH REACTORS AT POWER LEVELS 1.0 MW OR GREATER

15 UNIVERSITIES OPERATE RESEARCH REACTORS AT POWER LEVELS BETWEEN 1.0 KW AND 1.0 MW

FOUR UNIVERSITY REACTORS HAVE SHUT DOWN RECENTLY

Letter From Hans H. Fleischmann, President, University Fusion Association

May 4, 1988

Senator J. Bennett Johnston, Chairman
Subcommittee on Energy and Water Development
U.S. Senate Committee on Appropriations
SD-131 Dirksen Senate Office Building
Washington, DC 20510

Honorable Senator:

In connection with your committee's upcoming mark-up sessions on the Department of Energy's Magnetic Fusion Budget, I would like to bring to your attention the adjacent Statement on behalf of the Univeristy Fusion Association presented by me to the Subcommittee on Energy Research and Development of the House Committee on Science, Space and Technology.

As you may see, this statement generally supports the Administration's goal of a fusion burn experiment for the U.S. Magnetic Fusion Program. However, we are seriously concerned if the construction of such an experiment, in particular CIT, were to be started and performed under the DOE 5-year flat-budget projection. In that case, we expect that the applied scientific non-burn part of the program which we call the "base program" would face very serious problems. We expect such problems already to lead to a serious deterioration under the further effort reductions envisioned by the present 5-year projection; they would be absolutely devastating if present flat-budget projection proves too optimistic or if, as may be expected, the costs of CIT exceeds the present projections. In any of these cases, the applied scientific program base which was built over many years, but was under-emphasized in its importance in the DOE presentation, could be completely destroyed given the existing political and budget considerations. As underlined by many past examples, this base program still will be of paramount importance in directing the present MFE program towards a final reactor that is economically and technologically acceptable to the market place, in particular, also to the wider utility community. We hope that these concerns can be recognized in your considerations; the fusion base program, including many Universities as well as many industrial and National laboratory groups, presently is already in very bad straights.

I should apologize for just sending you the mentioned statement; we had originally planned to make a similar oral presentation to your committee, but this was not possible due to this year's budget calendar. Of course, I will be fully available to you or to your staff (through telephone 607-255-4910 or by visit to your office) if you wish any further information.

Finally, let me thank you and your committee for the very thoughtful support you and your committee have given to the concerns of the fusion community over the past years.

Very sincerely yours,

Hans Fleischmann

Hans H. Fleischmann, President
University Fusion Association
Professor & Associate Director

Statement of the University Fusion Association

I am bringing this statement before you as a representative of the University Fusion Association, which you may remember from similar earlier occasions. With a present membership of about 140 active researchers in 35 universities, our Association contains a representative cross section of the full fusion community in universities. During the preparation for this testimony, I sought and received the views of a sizable representative sample of senior university researchers, which collectively represents a community that is technically involved in essentially all aspects of, and highly dedicated to, the goal of making thermonuclear fusion a useful power source for us and our children. I will present to you a carefully balanced aggregate of the views of the vast majority of this body. I will be brief and try to provide any further details you may wish either here orally or in subsequent written communication.

The effort proposed by the Administration essentially contains two major parts. One of these, mainly emphasized in the Administration proposal, concerns the near term drive toward the achievement of an ignited thermonuclear plasma in a tokomak-type machine. Physically, this includes the already existing Tokamak Fusion Test Reactor (TFTR) device together with a number of existing directly related experimental, theoretical and technological efforts; in addition, it also includes a specific proposed new and rather large device, the Compact Ignition Tokamak (CIT). On this part, the university community recognizes as important the basic goal of obtaining and investigating the first controlled ignited plasma on earth; such ignition clearly is an important necessary step in our quest towards fusion energy. First studies of the burning plasma state still can be performed using existing machines. More detailed studies will require one of the new devices that have recently been proposed. Such a device probably will be quite expensive, but, if properly designed, funded and executed, its expense is justified by the progress it permits.

However, the university community shares a serious concern about starting such a device under the present highly restrictive budget climate, in particular in connection with the present 5-year flat-effort budget projection.

Some of this concern applies to the device itself where the budget limitations will seriously strain the success chances of the machine. Moreover, an even more serious concern exists with regard to the remaining second part of the Administration proposal, i.e., the base program of the OFE fusion effort. The health of this program part has been severely impaired by the budgetary needs and restrictions of the last years. Any additional constraints and effort reductions brought on by the planned device construction, as already projected in the Administration's 5-year plan, I expect, will lead to serious problems including a possible paralysis and widespread defection of good people. Obviously, these problems would be further exacerbated if future budget appropriations prove less than level-effort or if the cost of the proposed, specific CIT device further escalates; the proposed overall budget of 360M$ for 1989 already constitutes an overly tight lower limit.

This base program encompasses a wide range of experimental and theoretical efforts including many directed at developing and testing new ideas and concepts--both for improving existing confinement concepts and for developing alternate, potentially better concept--, efforts for developing advanced generic technology and materials, general system studies, basic goal-oriented physics and engineering studies, the training of new people and others. Universities carry a sizable part of this effort, but such studies also are extensively pursued at various industrial and national laboratories.

This base program, although not directly related to the frontline machines, proved very important for the fusion program in the past, and it will still be of crucial importance in future for the development of a realistic, practical fusion reactor.

Examples of past achievements abound in all areas, but let me concentrate on a few university contributions in the concept areas--I hope without prejudicing or reducing other equally important areas and efforts: The high-field-tokamak concept is an outstanding example where the idea, initially hatched and tested by Prof. Coppi and his coworkers at MIT, and subsequently developed in successively larger experiments, now is at the base of the planned CIT device. Similarly, "current-drive by microwaves", i.e. methods for permitting long-time steady-state discharges in tokamaks, have first been hatched in uni-

versity-size groups both here and abroad, and then brought to the stage where this idea now is being considered for the large international ITER project. Another example is the stellerator concept which, after having been abandoned by the PPPL, because of bad confinement, and subsequently having been shown in Europe to have very good confinement characteristics, was reintroduced to the US by a university group in Wisconsin and is now being investigated in a larger ATF experiment in the Oak Ridge National Laboratory. In all these cases, as in many others, the new idea had to be tested, modified and proved in a hierarchical progression of increasingly larger, increasingly less flexible and increasingly more costly and time-consuming experiments until it could be included in a "frontline" experiment aimed at driving plasma parameters into a new regime. Similarly, most of our best present diagnostic methods first were tested and developed on small, flexible experiments before their inclusion in large experiments. Major experimental failures and misconclusions in fusion research had their origins in an insufficient recognition of this overall relationship often stimulated by politically determined or overly ambitious goals. As a small example, I might be permitted to be parochial and point to my own experiments at Cornell where, in the early 1970s, the failure of the large (> 20 M$) Astron experiment at LLNL was taken as a sign of basic non-attainability of the goal of "field-reversal". Starting much later, but using a different method, we obtained the desired results in a very small (100 K$) flexible experiment.

As mentioned, such contributions of the base program still will be crucially needed in the future. In view of the envisioned final economic use of fusion reactors, it is not sufficient just to produce energy, but this energy has to be generated in the technologically and economically best manner. Sizable improvements still are needed on all fronts. Again, a short and badly incomplete list of a few examples should suffice. Tokamaks still require many improvements, for example, higher beta and better confinement; some ideas for this exist. At least equally important, several "alternate" confinement concepts, including reversed-field pinches, compact toroids, and stellarators, have the inherent potential to provide economically much better final reactors and/or also a better understanding of physics issues in tokamaks. At present, these alternates are investigated only on a level comparable to that

of tokamaks 10-15 years ago, and progress is badly slowed by their financial limitations which permit only very few (1-3) simultaneously existing experiments in the world. (In contrast, there always existed simultaneously several (5-8), often very similar first-rate tokamak machines in the world during the basic development of this concept, i.e. until very recently.) We should be reminded how problematic the premature narrowing of the reactor options and overly ambitious program steps proved in the fission reactor program. Clearly, these concepts need to be investigated harder and their premature demise avoided so that they, if then physics-wise successful, maybe brought closer to a level where they can actually compete with tokamaks. The mentioned Stellarator history is only one example of a too early - although fortunately corrected - dismissal of an alternate concept. Similarly, improvements and optimization of reactor materials and technologies will be decisive in economic-technological respects. Further, basic physics investigations, in particular on turbulent plasma diffusion, may lead us to a much better predetermination of plasma behavior in new machines than our present rather coarse empirical scaling laws permit, resulting in very sizable savings and the avoidance of very costly mistakes. Finally, a healthy theory program is needed in cooperation with these efforts for optimization and full fruition of these efforts.

As mentioned, these are only a few examples. For the long term health and success of the overall program, and the avoidance of a Clinch-River-type situation, a healthy base program with its influx and sifting of new ideas still is absolutely essential.

Last, but not least, we would like to thank you for your willingness to hear our opinion and also for the support your Committee has shown to Universities and the entire fusion community through the years.

STATEMENT OF THE GAS RESEARCH INSTITUTE

I appreciate the opportunity to submit testimony for the Record regarding Gas Research Institute's (GRI) recommendations in the Department of Energy's (DOE) Biofuels Program. GRI's recommendation is to appropriate funding for a total of $1.35 million in FY 1989 to be used in the continuation of the Methane From Community Waste Project located at Walt Disney World.

GRI has contributed over $5 million to date on this project and plans to commit nearly $1 million over the next two years. GRI anticipates additional cofunding from industrial partners.

GRI is an independent, not-for-profit scientific research organization that plans, manages, and finances a cooperative R&D program for the benefit of its 255 members and their customers. Even though GRI is not a government contractor, national energy R&D policy is a major factor influencing the GRI R&D program since GRI cofunds and coordinates many of its research projects with DOE. Therefore, congressional action on a DOE alternative fuels program has an impact on the gas industry's R&D program.

DOE ENERGY POLICY

The DOE FY 1989 budget request accelerates the shift started seven years ago to increase funding for defense-related activities while significantly reducing spending for energy R&D. The Administration's FY 1989 budget request clearly illustrates the drastic reduction in all nonnuclear R&D since 1981. (See Exhibit 1.) Funding for these programs has decreased by an average of 81 percent since 1981 compared with the FY 1989 request.

EXHIBIT 1
MAJOR CHANGES IN NONNUCLEAR ENERGY PROGRAMS[1]

($ Millions of Budget Authority)[2]

DOE Program	Actual FY 1981	Actual FY 1983	Current FY 1988	President's Request FY 1989	% Change 1989/81
Solar Energy R&D	$549	$202	$ 97	$ 80	-85%
Energy Conservation R&D	292	134	154	81	-72%
Fossil Energy R&D	997	330	327	167	-83%
Geothermal Energy R&D	156	58	21	16	-90%
Electric Storage/Systems R&D	112	43	30	26	-77%

1 The percentage reductions do not reflect the effect of inflation on the real program level. Nineteen eighty-nine dollars are estimated to be worth only 77 percent of their 1981 value, so real reductions are even greater than displayed above.

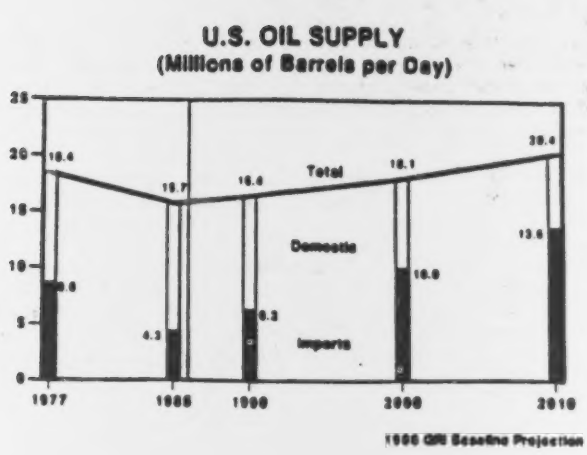
2 Source: Congressional Budget Office

This policy of drastically curtailing essential, ongoing nonnuclear energy research invites severe problems in meeting the nation's future energy demands. Funds are not available to test and evaluate alternative energy options. Establishing a viable renewable energy program in DOE is a step in the right direction in restoring some balance in federal energy policy and in helping to achieve long-term energy security.

LIQUID FUELS OUTLOOK

A rapid increase in oil imports will result from an unbalanced energy research policy that concentrates nearly all R&D funds on long-term nuclear energy, high-energy physics, and basic energy sciences while essentially ignoring the potential of nearer-term alternative fuels to diversify our energy resources. U.S. consumption of oil is projected to increase, rising from 16.3 million barrels per day in 1986 to 18.1 million barrels per day in 2000. In 1986 over 50 percent of total U.S. oil consumption was in the transportation sector. In the mid-1990s, imports are expected to exceed the 1977 historic peak of 8.6 million barrels per day and are projected to reach 10 million barrels per day by 2000. (See Exhibit 2.)

EXHIBIT 2



GRI's 1987 Baseline Projection indicates until 1990 the global oil supply situation will remain comfortable. The call on OPEC sources will be low in historical terms, and U.S. production will hold up pretty well. After 1990 production in the U.S. and other non-OPEC Free World sources will diminish rapidly. OPEC's share of production will reach a level of 21 million barrels per day in 1990, which is in excess of the 20-million-barrel level that is considered by many analysts to signal the return of OPEC dominance in the pricing strategy. Supply will tighten sufficiently by 1990 to support escalation in real prices. Meanwhile, U.S. petroleum demand will gradually increase, and U.S. production is projected to decline. By 2000 more than half of the U.S. requirements for petroleum will be imported. This will make the U.S. critically dependent upon a Middle-Eastern-dominated world oil trade.

The outlook is threatening. One effective energy policy that would reduce the nation's dependence on imported oil would be to fund an alternative fuels research program for use in technologies that are economically attractive such as the biofuels project described below. Such a program would strengthen U.S. energy self-sufficiency and would increase the use of abundant domestic resources.

METHANE FROM COMMUNITY WASTES (WALT DISNEY WORLD)

The Methane from Community Wastes Project is a multidisciplinary, multi-institutional project to develop non-energy-intensive waste treatment and utilization technologies for the production of methane. Since the project began, the scope of the project has been expanded from a wastewater treatment project to encompass all possible feedstocks generated in a community. A community waste-to-energy facility is envisioned that would be situated within the city gates, treat all organic community wastes, and provide medium- or high-BTU gas. Anaerobic digestion was selected as the conversion process because of its low energy input requirements and wide scope of application to substrates of varied moisture contents.

According to the U.S. Department of Interior, nearly a half trillion pounds of organic municipal wastes (dry ash free basis) enter the U.S. collection and disposal system each year. Urban waste alone could supply 2 to 3 quads of methane through the successful development and application of anaerobic digestion technology. Residues in the category of urban waste include municipal and industrial solid wastes, sewage, and sewage-grown biomass. The development of systems to capitalize upon this resource while at the same time alleviating the pollution problem of these materials has been the goal of the Methane from Community Waste Project at Walt Disney World (WDW), Florida.

The project began in 1978 by developing a system using water hyacinths to clean domestic wastewaters, combining the produced sewage sludge and water hyacinths as a feed for

methane production via anaerobic digestion. A prototype water hyacinth wastewater treatment plant has been in operation at WDW since 1979. The project was supported by the U.S. Environmental Protection Agency and Solar Energy Research Institute. Early laboratory studies in the conversion of hyacinth/sludge blends to methane indicated that the vertical flow reactor (VFR) (a novel, nonmechanically mixed reactor) could achieve 20+ percent greater methane yield per pound of feed than conventional reactors. Based on this performance, a 1200 gallon VFR experimental test unit (ETU) was designed and constructed by the Institute of Gas Technology on the WDW site in 1983. This VFR has provided 4 years of continuous operation.

In 1982, a study was conducted by Black and Veatch on the economics of methane production from a conceptual secondary treatment hyacinth system. It was determined that methane from such a system could be produced for $2.50 to $4.80/mmBtu for plants sized for populations of 100,000 to 500,000 if certain technical goals could be met, including the achievement of a methane yield of 4.5 $ft.^3$/lb volatile solids added at a 25-day hydraulic retention time. Based on recent results, methane yields over 7.5 $ft.^3$/lb have been achieved at a shorter retention time of 11 days, which has brought methane costs down to the $2.00 to 3.00/mmBtu range for populations of 10,000 to 500,000, thereby increasing the range of technology application to smaller communities.

During the past 4 years the ETU has been used to evaluate water hyacinth/sewage sludge blends and sorghum (a biomass feedstock) and is currently being used to assess municipal solid waste. In all cases the ETU has performed well and has exceeded that of conventional digesters in methane yield as well as system economics.

The research and development of this energy system is divided into 3 areas: 1) laboratory studies; 2) operation and maintenance of the ETU facility; and 3) systems evaluation. The laboratory research provides data for verification of mathematical models and the design and operation of advanced reactor systems. In addition, laboratory studies look at the fundamental limiting step in the process--cellulose hydrolysis--by examining the microorganisms responsible for hydrolysis and the micro-environment existing between the organism and the cellulose particle. The laboratory efforts involve a team of experts in the areas of anaerobic digestion, feedstock analysis, microbial community analysis, modeling, organism isolation, process control, instrumentation and process development to generate and evaluate data for use in the scale up evaluations.

At the ETU facility, development activities address scale-up issues associated with feedstock processing, materials handling, digester operation, and effluent handling. The laboratory data is verified, and any operational problems are identified and resolved. In addition, advanced systems for treating wastewater, e.g., nutrient film technique and gravel bed filters, are evaluated. The information obtained at the ETU is used in the systems evaluation studies.

Systems evaluations of integrated energy production concepts are conducted on a continual basis to establish goals, assess progress, and identify promising new research directions. This project relies heavily upon architecture and engineering firms to perform such studies, a practice that adds practical experience to the evaluation of conceptual designs and accuracy to system costing. The goal of these efforts is to translate research results into economics that relate to potential investment opportunities in community energy systems.

A comparison was made between mass burning and anaerobic digestion of municipal solid waste/sewage sludge. At 1000 ton/day and 3.5¢/kWh, mass burning requires a tipping fee of $48.60/ton, anaerobic digestion with electricity generation via gas turbine requires $39.30/ton, pipeline methane production requires $34.90/ton and medium-Btu gas sales require $25.30/ton.

Currently (1988), the project is concentrating on municipal solid waste utilization, the production of high purity methane (95+ percent) directly from the digester, and advanced wastewater treatment systems. Future activities will include scale-up to ETU of the methane enrichment technique, evaluation of industrial waste feedstocks, and systems analysis.

The participating research organizations and their areas of activity are listed below.

Reynolds, Smith & Hills	Contract coordination Waste resource assessments Systems analysis
University of Florida	ETU operation Process development
Walt Disney Imagineering	WDW site management Advanced wastewater treatment Effluent utilization
Institute of Gas Technology	Methane enrichment (pilot) ETU support & modifications
University of Illinois	Methane enrichment (bench)
Cornell University	Advanced wastewater treatment Anaer attach film expand bed
Stanford University	Bacteria hydrolysis lignocell

Funding for this project has come from many sources. A listing of the supporters appears below.

Organization	$000
Gas Research Inst.	5,650
U.S. DOE/SERI	1,450
Walt Disney	370
S. Cal Edison	300
University of Florida	100
United Gas Pipeline	125
Brooklyn Union Gas	20
NASA	75
U.S. EPS	150
NYSERDA	250

RECOMMENDATIONS

GRI has focused its biomass conversion research on anaerobic digestion as the process of choice. GRI's strategy promotes the involvement of researchers, agricultural organizations, and gas companies through cofunding and participation in the research. Substantial cofunding has been provided by several organizations strongly interested in this program, including the Department of Energy.

An FY 1989 commitment of $1.35 million from the Department of Energy is recommended to continue the Methane From Community Waste Project.

STATEMENT OF THE AMERICAN WIND ENERGY ASSOCIATION

Mr. Chairman and members of the Subcommittee, I am Thomas O. Gray, Executive Director of the American Wind Energy Association (AWEA). We appreciate the opportunity to testify on the status of wind energy technology and the future of the U.S. wind energy industry.

AWEA is a trade association which represents the manufacturers of wind electric turbines and components and related companies.

Our testimony basically emphasizes three points:

1. Despite a a series of major setbacks in recent years, such as the decision of the Congress to allow renewable energy tax incentives to expire in 1985, and its further decision to cut the wind energy research budget by nearly 50% last year -- the American wind energy industry is continuing to develop an increasingly mature energy-producing technology.

2. The progress of our industry cannot be sustained, however, without a continued serious commitment to the development of wind energy technology by the federal government. While we are slashing our research budget, other countries are launching aggressive joint government-industry programs.

3. Accordingly, we propose not only to maintain the current wind energy research program without further cuts, but in addition to fund a Wind Technology Leadership Initiative to develop a new advanced intermediate-size wind turbine. Such a turbine will allow American industry to remain competitive in the new and growing international market for power supply which we see developing in the 1990's.

We would like to elaborate on these points.

1. Despite a a series of major setbacks in recent years, such as the decision of the Congress to allow renewable energy tax incentives to expire in 1985, and its further decision to cut the wind energy research budget by nearly 50% last year -- the American wind energy industry is continuing to develop an increasingly mature energy-producing technology.

Our industry absorbed a major blow in 1986 when the Congress decided not only to allow the 15% renewable energy investment tax credit to expire, but also at the same time to repeal the basic 10% investment tax credit.

In the two years since, the pace of wind energy's growth has slowed sharply. The total capacity of new wind turbines installed in 1986 dropped to about 200 megawatts (MW) from approximately 500 MW in 1985, a 60% reduction after four straight years of exponential growth. In 1987, about 150 MW were installed, for a further 25% drop.

Nevertheless, wind energy technology is continuing to mature:

oEnergy production per kilowatt (kW) of installed capacity rose from 660 kilowatt-hours (kWh) in 1985 to 920 kWh in 1986, an increase of nearly 40%, and to an estimated 1,100 kWh in 1987 for a further 20% boost.

o1987 marked our sixth consecutive year of increased capacity and increased productivity, which combined to bring about

another massive jump in total wind electric power production. Total windfarm power output rose from 670 million kWh in 1985 to 1.2 billion kWh in 1986 and 1.7 billion kWh in 1987 -- a 150% increase in just the last two years.

oAbout 3 million barrels of oil, worth about $50 million, would have been required to produce the same amount of electricity as the windfarms did in 1987.

oWhile the indicators of production climbed, wind energy's installed costs have continued to drop steadily (see Attachment A). The turnkey installed cost of a windfarm at the end of 1987 was a little less than one-third what it was in 1981.

In short, after a decade of development and learning experience, wind energy continues today to look like one of the outstanding winners among the new energy sources which the Congress targeted for federal research efforts in 1974.

That being the case, it is difficult to understand why the Congress continues to cut the wind energy research budget. While we understand the need for budget control, our feeling is that scarce resources should be directed toward the areas with the greatest potential for payoff. Wind energy has clearly shown major promise not only in the laboratory, but in the real world, despite the very difficult technical challenges it has posed.

2. The progress of our industry cannot be sustained, however, without a continued serious commitment to the development of wind energy technology by the federal government. While we are slashing our research budget, other countries are launching aggressive joint government-industry programs.

Despite the technological and commercial progress our industry has made, its survival today and in the near term is threatened by a series of unfavorable federal policy decisions.

Federal government support for wind energy has been dramatically reduced. The energy investment credit and the basic investment credit totalled approximately $200 million in support during calendar 1985, their last year of existence -- an amount more than 20 times last year's federal wind research and development (R&D) budget. Thus wind energy is unique among the renewable energy industries in having lost over 95% of the overall share of the federal budget which it held in 1985.

In addition, the Congress has also sharply cut the wind research budget, from nearly $25 million as late as FY 1986 to just $8.5 million last year -- a cut of two-thirds in just two years!

And at the same time as the U.S. has become the only major industrial country in the world to reduce spending on wind energy, our foreign competitors are forging ahead.

The results are clear. Over the last seven years, as our wind energy research budget has been cut by approximately 90%, the American wind turbine industry has gone from making 100% of the product sold in the U.S. market to 30% today (see Attachment B).

Our Association has steadfastly opposed protectionism. We believe that open commercial competition in the world market serves everyone's best interests, and that the key to commercial competition is making a better product.

But the manufacturers of other countries enjoy an open and productive relationship with their governments, and with our government making drastic cutbacks in its commitment, the battle is becoming unequal.

A single example will serve to illustrate what our industry is up against in seeking to export its products.

Members of a U.S. wind energy trade mission to India, which returned just a few weeks ago, were dismayed to find upon their arrival in India that the government of Denmark, a country with fewer people than the state of Virginia, has agreed to give the Indians $25 million in aid provided the funds are spent on Danish renewable energy equipment. This compared with the total U.S. wind research budget of just $8.5 million.

Market researchers have estimated that $3 billion to $6 billion of wind energy equipment will be sold per year worldwide by the year 2000. If we continue to pursue wind energy research actively, most of those machines can still be American.

3. Accordingly, we propose not only to maintain the current wind energy research program without further cuts, but in addition to fund a Wind Technology Leadership Initiative to develop a new advanced intermediate-size wind turbine. Such a turbine will allow American industry to remain competitive in the new and growing international market for power supply which we see developing in the 1990's.

The Initiative, which consists of developing the turbine and field-testing it in two major configurations, would last for four years, beginning in FY 1989 and extending through FY 1992, and would be added to the continuing research activities of the federal R&D program.

The concept of the Initiative is based upon extensive private sector experience gained over the last eight years with thousands of wind turbine energy generation systems in California.

While California windfarms have successfully proven the feasibility of large-scale wind electric generation, they have also made it clear that some major technical challenges must be met before the U.S. wind energy industry can successfully compete either with conventional energy sources in the domestic power market or with foreign wind turbine manufacturers overseas:

-- The cost of energy from wind turbines, while it has come down steadily, is still too high;

-- The characteristics of the power they produce are not sufficiently attractive to electric utilities; and

-- The technical superiority of U.S. equipment has been countered effectively by experienced foreign exporters offering turbines which initially appeared more reliable.

The Wind Turbine Leadership Initiative will respond to these challenges, building on:

-- Experience of U.S. wind energy companies in the California proving ground, which is by far the world's largest and most extensive;

-- Scientific knowledge and results which have been obtained and which continue to flow from the U.S. federal wind energy research program; and

-- Major advances in: semiconductor technology; the technology of circuits for processing large quantities of electric power; and new options for wind turbine control systems.

Funding required for the Initiative amounts to $16 million during its four years, over and above funds required for the balance of the federal wind energy program, with the largest part ($7.5 million) coming in the second year, FY 1990.

The Initiative will provide the following benefits in return for this investment:

1) It will build on and help to expand the current U.S. lead in wind-driven power generation technology, a promising international market for the 1990's and beyond;

2) It will lead to export sales of equipment and services, aiding the balance of trade, reversing the recent flow into this country of non-U.S. manufactured wind power equipment, and providing increased domestic manufacturing and equipment service jobs;

3) It will double the available market for wind turbines and cut the cost of energy to levels competitive with conventional power sources;

4) It will lead to greater domestic use of wind energy, which will reduce atmospheric pollution, improve national security, and help diversify U.S. energy supplies.

We have a detailed description of the proposed Initiative and a series of other detailed recommendations on the wind energy research budget which we will have already presented to the Subcommittee staff for review.

While we call for some changes in emphasis in the federal R&D program, our main recommendations are two: first, that the overall budget for ongoing research not be reduced below last year's level of $8.5 million, which is already well below what we consider a minimum realistic level of effort; and second, that an additional $4.3 million be allocated for the first year of the Wind Technology Leadership Initiative.

Finally, we also support adequate funding for the U.S. Committee on Renewable Energy Commerce and Trade (CORECT), an interagency group which seeks to promote U.S. renewable energy exports.

Again, we thank you for the opportunity to present our views.

STATEMENT OF THE AMERICAN GAS ASSOCIATION

The American Gas Association (A.G.A.) is a national trade association comprised of some 250 natural gas distribution and transmission companies serving over 166 million natural gas consumers throughout the United States. We appreciate this opportunity to present our views on natural gas-related research and development (R&D) conducted or sponsored by the Department of Energy (DOE) and the Federal Energy Regulatory Commission's (FERC's) Fiscal Year (FY) 1989 Budget in relation to expediting environmental analyses for new pipeline capacity to the Northeast United States.

The natural gas industry recommends an appropriation of $19.9 million for FY 1989 for renewable energy R&D falling under jurisdiction of this Subcommittee. This total includes $10.4 million for geopressured methane R&D; $8 million for biomass R&D; and $1.5 million for liquefied natural gas safety R&D.

THE IMPORTANCE OF GAS-RELATED RESEARCH

The United States needs an adequately funded DOE research program not only to meet future energy needs, but also to remain competitive in today's world economy. Gas-related research may be the most important component of DOE's research program.

Natural gas has an important future role because its attributes favor its use in a myriad of applications. First, gas is the cleanest of all fossil fuels. Gas can be used for pollution control by itself and to reduce sulfur and nitrogen oxide emissions of other fossil fuels. Gas can also be used as a vehicular fuel. No other single fossil fuel can be used in as many applications as natural gas without major negative environmental consequences. Indeed, the air pollution problems resulting from the combustion of other fossil fuels has caused many in Congress and the Administration to call for solutions to the ozone nonattainment and acid deposition problems facing the nation today.

Second, natural gas can be delivered quickly, efficiently and without major environmental impact, through the existing million-mile transmission and distribution system. Third, natural gas can be converted into usable energy more efficiently and inexpensively than other fossil fuels.

With these attributes, there is little question that natural gas will play an important role in the nation's energy future and, given the multitude of uses natural gas can serve, DOE should invest more money, not less, on gas-related research.

DOE's role in gas research serves two very important purposes. First, DOE's support of gas supply-related research will ensure the recovery of a larger percentage of the total gas resource base which is several thousand times larger than the presently recoverable gas resource base. The amount of gas that may be recovered from the total gas resource base is directly contingent upon our ability to develop new tools and techniques to recover this gas at commercially viable prices.

According to estimates from the latest Potential Gas Committee assessment, conventionally recoverable gas at year-end 1986 in the lower 48 states (including proved reserves) was 720 Tcf. The Energy Information Administration estimates proved reserves of gas in the lower 48 states at year-end 1986 to be 159 Tcf, giving our nation the equivalent of about 50 years of conventional supply at 1987 production levels. Technological breakthroughs are necessary to increase long- term gas supplies dramatically. Federal funding is necessary to develop the long-term, high-risk technology base necessary to achieve these breakthroughs.

We are pleased that this Subcommittee and Congress have recognized the importance of gas-related research. By appropriating 25 percent more research and development dollars in FY 1988 than FY 1987 for geopressured resources, Congress has reversed a long-term downward trend in R&D funding. We hope this trend will be continued. Moreover, we are also pleased that Congress had appropriated $5 million for this program in FY 1988, $2.3 million more than the Administration's recommendation.

SPECIFIC FUNDING RECOMMENDATIONS

(1) Geopressured Methane ($10.4 Million)

Geopressured methane is found in either a free state or dissolved in water and trapped in sedimentary rock at higher-than-normal pressures. One of the largest geopressured areas underlies a portion of the Texas and Louisiana Gulf Coast. Estimates of the total resource in-place range up to 100,000 Tcf; however, estimates of the amounts of gas that might ultimately be recovered, given current recovery techniques, range between 25 and 1,200 Tcf. If technological breakthroughs can be achieved, geopressured methane could become a virtually inexhaustible source of domestic energy.

Research conducted by DOE in geopressured/geothermal zones is focused on producing both gas and electricity from low-grade heat in the reservoir brine. DOE should redirect its research efforts and concentrate more on recovering the vast amount of dissolved methane found in geopressured zones. In addition to DOE's current geopressured program, DOE should develop new approaches that utilize traditional engineering principles to maximize gas production and minimize brine production.

(2) Biomass ($8 Million)

Since the supply of organic and waste materials is virtually unlimited, supplemental methane supplies from biomass and waste conversion can add significantly to the total future gas supply picture. Developing energy from biomass also would promote the environmental benefit of productive use of currently "useless" materials. However, the quality of the gas produced and a suitable processing technique are important concerns that inhibit the widespread use of these potential gas resources.

The sources of biomass, land and marine plant matter, must be tested to determine the appropriate technology for producing high-quality gas from the resource. Because these sources vary greatly in content, the technologies must be flexible. To produce gas economically, processing techniques must be improved to increase conversion efficiencies. This can be accomplished by providing adequate funding to ensure continuity of long-term, high-risk R&D programs.

(3) Liquefied Natural Gas Safety ($1.5 Million)

Liquefied natural gas (LNG) is natural gas that is converted into liquid form by reducing its temperature to minus 250oF. This technique is advantageous because it permits large volumes of natural gas to be transported by truck or ship over great distances and terrain not suitable for pipelines. Potentially, the resource base for LNG includes any overseas gas reserves beyond those required for local consumption. However, one difficulty with transporting LNG has been that more definitive experimental data are needed on the behavior of large spills.

The Liquefied Gaseous Fuels Test Facility in Nevada allows researchers, on a user fee basis, to evaluate spills of liquefied gases, including LNG, at magnitudes far greater than have been previously possible. The research needs include: investigating equipment vulnerability to natural forces, the ability of dikes to contain large spills, the advantages of in-ground storage; the behavior of spills on different surfaces (soil and water) and the validation of methods for preventing accidental liquefied gaseous fuels spills.

CONCLUSION ON RENEWABLE ENERGY

The natural gas industry recognizes that the continuing budget deficit places severe constraints on federal energy research dollars. Over the last two years, we have pared back our recommendations, requesting instead funding for only those technologies that are essential and prudent for the orderly

development of new, domestic gas supply and utilization technologies. If Congress adopts our research recommendations, the nation will, over the long term, improve its energy supply security and energy efficiency.

FERC FY 1989 BUDGET

In order for manufacturers, electric power generators and ordinary consumers to realize the benefits of new natural gas technologies, pipeline capacity has to be available to serve them. In this regard, the Chairman of the Federal Energy Regulatory Commission (FERC) recently announced that the environmental analysis needed before FERC can approve projects to serve the rapidly growing gas markets in the Northeastern U.S. will cost approximately $10 million and will take the Commission until 1992 to complete. This delay means that new capacity could not alleviate the rapidly increasing energy deficiency in the Northeast -- which is more reliant on imported oil than any other region -- until 1994. During that time crucial markets will be lost, permanently reducing the demand pull necessary to develop new technologies. Informed sources at the Commission have said that processing the Northeast projects would consume the Commission's entire three year budget for environmental reviews, leaving nothing for the many other projects that also must be reviewed. Clearly, FERC's budget must be adequate to allow the Commission to hire independent contractors to perform the draft environmental statements for FERC staff to finalize before public comment is sought.

Moreover, other methods of expediting the process, including breaking down the "open season" proposals into smaller, identifiable, truly comparative subgroups, should be explored by Congress and the Commission. In a crucial situation such as this -- where gas supplies have been identified; where local distribution companies have entered into contracts for the gas supplies and transportation services; and where investors have come forward with proposals to build the pipeline capacity needed to bring the identified gas supplies to the identified customers -- it is surely against public policy for the regulatory process to hold up development of gas service a minimum of six years.

While funding of Environmental Impact Statements (EIS) is a basic FERC responsibility, the applicants and other interested private parties should be permitted to fund the environmental review privately in order to expedite the process. However, the individual option to pursue federal funding should also remain open. FERC must determine what interested private parties are willing to fund the EIS(s) and then be able to request from Congress the amount of money necessary to expedite the process.

The capacity problem in the Northeast has major energy security implications. The U.S. Department of Energy's report to the President, Energy Security, stressed the importance of substituting plentiful supplies of natural gas for imported oil as a way of achieving energy security and enhancing national economic goals. Nowhere is this more relevant and timely than in the markets of the Northeast United States.

The Northeast is a high growth area for conventional natural gas markets. It is also an area where imported oil remains the primary alternate fuel and where conversions to natural gas will continue to take place. In 1987, imported oil made up about 40 percent of the nation's oil consumption. Such heavy reliance on foreign oil not only adversely affects the U.S. balance of payments, it also affects the nation's security. A.G.A. has estimated that nationwide, natural gas could displace 350,000 barrels of oil a day immediately, which would shave our trade imbalance by $200 million a month. After that, we estimate that gas could displace 720,000 barrels a day (equal to $430 million a month) within one year, and 1,700,000 barrels a day (equal to over $1 billion a month) within five years. About 35 percent of this potential is in the Northeast. Additional pipeline capacity in the Northeast would be a significant and tangible step toward oil displacement.

Electric generators in the region rely heavily on imported oil and many are becoming very interested in conversion to natural gas. In 1986, electric utilities in the Northeast used 380 thousand barrels/day of oil -- roughly 56 percent of all the U.S. oil consumed by U.S. electric powerplants and seven percent of total U.S. net oil imports. If these plants were converted to natural gas, they would require an additional 814 Bcf/year to be delivered to the Northeast. The present infrastructure needs to be expanded dramatically to even begin to be able to serve this load. The potential for displacing such significant quantities of foreign oil in powerplants is one of the most important reasons for adding new natural gas delivery capability in the Northeast.

Environmental concerns are another reason for increasing Northeast pipeline capacity. Many of the electric generation projects that would be served by natural gas are the result of intensified federal and state environmental regulations, including state acid rain legislation, as well as federal ozone and carbon monoxide nonattainment requirements. Such concerns and problems will accelerate demand growth in the region.

For all of these reasons, it is an absolute priority that adequate pipeline capacity to this region be made available as soon as possible. We respectfully urge this Subcommittee to direct FERC to expedite the Northeast Proceeding and, ensure that adequate private and public funding is available to hire qualified, independent contractors to perform the necessary draft environmental statements for final FERC staff review.

STATEMENT OF THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Thank you for granting our request to appear before you this afternoon. I am Vernon T. Jones, President of The Williams Companies. I am speaking on behalf of the Interstate Natural Gas Association of America (INGAA), of which I am Chairman.

I am here to request the addition of $2 million to the FY 89 budget for the Federal Energy Regulatory Commission (FERC). These funds are necessary to expedite the Commission's review of projects to expand pipeline capacity into the northeastern United States. The region urgently needs additional pipeline capacity to meet growing demand for natural gas for residential customers and for electricity generation.

FERC Chairman Martha Hesse has stated that $10 million would permit the necessary environmental reviews, which represent a lengthy component of the Commission's review of the proposed projects, to be expedited and completed in three years. This would allow the Commission to reduce its overall review time by half, from eight or more years to about four and one half years.

The proposed pipeline projects are needed to assure continued availability of natural gas service to consumers in the Northeast in the near future. Natural gas consumption in that region has grown about 14 percent over the past 10 years, and rose about 26 percent in 1987 compared to 1986. This growth has raised concerns that several locations in the region are becoming capacity constrained. The New York Public Service Commission has advised several of its gas distributors that unless additional transmission capacity and gas supplies are secured, gas curtailment programs could be instituted as early as next year. New interstate pipeline facilities are required now.

Moreover, the Northeast in general and the New England states in particular are expected to require additional electric generation capacity over the next few years. In a recent statement by the chief executive of the New England Electric System Co., New England was described as being threatened by an electric generation capacity shortfall that could leave the region short by 3,000 megawatts as early as 1991.

A large percentage of that incremental electric generation capacity could rely on natural gas for two reasons:

- Gas-fired combined cycle power generation units can be installed faster and more economically than other types of units; and
- Natural gas would pose little or no environmental concerns to the region.

Under such a scenario, the need to expand natural gas transmission capacity into the Northeast would be even more critical.

The urgent need of the Northeast for additional natural gas has been recognized by the FERC. In July 1987, the Commission announced an "open season," inviting applications to provide new gas service to the region. Since then, a number of Senators, House members, and state officials from the region have asked the FERC to seek ways to allow additional gas to flow into the region as soon as possible. Providing needed funds to expedite the essential environmental reviews is a critical first step in addressing these needs.

Because of the size and complexity of some of the proposed Northeast projects, history indicates that the FERC's review could require at least six or up to eight years to complete. According to the FERC, the proposed projects involve "huge sums of money ... and huge volumes of new capacity." The FERC has also stated that the applications involve sensitive environmental issues and "[i]n some cases, an environmental impact statement must be prepared."

In a recent case, an application for new capacity was filed by Boundary Gas, Inc. in early 1981 but the FERC's review was not completed until late 1987. Construction was finished earlier this year, almost eight years after the initial filing. A majority of the proposed Northeast projects are larger and more complicated than the Boundary Gas project, suggesting that the review process for these projects could easily extend beyond eight years. A delay of this magnitude could result in a critical part of the nation being energy starved.

The FERC has prepared a schedule that could reduce the environmental review to three years and the overall review time to about four and one half

years. However, this schedule is predicated on allocating $10 million to expedite the environmental analysis. By providing $2 million in additional funds in the FERC's FY 89 budget, work could start on the environmental analysis this year, thus helping the FERC expedite its overall review process.

Mr. Chairman, thank you again for allowing me this opportunity to testify. We hope that you and the other subcommittee members will give immediate and favorable consideration to this recommendation. I would be pleased to answer any questions you may have.

STATEMENT OF THE UNIVERSITY OF ROCHESTER LABORATORY FOR LASER ENERGETICS

Summary

The University of Rochester's Laboratory for Laser Energetics (LLE) mission and assigned role in the National Inertial Confinement Fusion Program (ICF) is to serve as the principal direct drive facility to conduct fully diagnosed implosion experiments to demonstrate the scientific feasibility of laser fusion. The ICF program depends critically on a sufficiently detailed understanding of implosion and thermonuclear burn in small capsules to produce high gain thermonuclear explosions on a *laboratory* scale. The controlled release of fusion energy has been a goal and one of the fondest hopes of science since the potential benefits of the fusion process for both weapons and energy were recognized and work begun on ICF over 20 years ago. Outstanding progress in just the last year shows that achievement of this objective is possible, as demonstrated by landmark achievements in the Halite/Centurion program and favorable experimental results carried out at Livermore on the NOVA facility and at Rochester on the OMEGA facility. ICF serves both the nuclear weapons research and development effort and civilian energy development needs. With sufficient laboratory yields, ICF can address many weapons issues and complement the nuclear test program.

The direct drive approach to ICF provides an essential capsule physics technical base to understand critical issues. The 1986 National Academy of Sciences (NAS) Report[1] noted "The implosion of capsules with direct drive may be more efficient than indirect drive but it places greater demand on the symmetry of the driving laser and on the control of hydrodynamic instabilities." At Rochester, exciting new results have demonstrated the achievement of high-density target compressions with direct-drive. This achievement addresses many of the key technical issues identified in the NAS report. The new results greatly enhance the prospects that the proposed OMEGA upgrade will achieve significant thermonuclear yield to assure the success of a national high-gain laboratory facility. DOE conducted an in-depth review of the Rochester experiments using a technical committee of ten scientific reviewers from LLNL, LANL, KMS Fusion, NRL, and Sandia. The review noted

> "The committee is confident, based on the data and analysis presented to it that fuel densities in excess of 100 XLD have been achieved. This indicates that significant improvements in drive symmetry and uniformity have been achieved since the National Academy of Sciences report (March 1986), which have enabled UR/LLE to meet the density goal. . . . The results represent a significant advance in direct drive ICF, and the committee looks forward to the further work and analysis that will be done. Finally, it should be noted that to achieve these results significant improvements both in laser uniformity on target and in cryogenic target technology . . . were made by the UR/LLE staff. Their efforts in these areas deserve special commendation."

The DOE Report on the Scientific Review of the University of Rochester Laboratory for Laser Energetics Experimental ICF Compression Results has been delivered to the appropriate Congressional Committees.

The continuing resolution for FY88 stated[2]:

"The conferees agree that $2,000,000 of the amount provided for operating funds for the glass laser program is for preliminary design engineering and development and related studies for the upgrade of the Omega Laser at the University of Rochester. Further appropriations are contingent on a determination by the University and DOE that the proposed upgrade can achieve the technical requirements specified in the National Academy of Sciences report (Happer committee). Further the conferees agree that the University and DOE is to submit a report to the appropriate committees of the House and Senate fully describing the purpose and requirement of the proposed upgrade and a funding profile of the plant and capital equipment cost and the annual operation cost of the program at Rochester."

The Congressionally mandated report has been delivered to the appropriate Congressional Committees. The OMEGA upgrade is designed to produce a thermonuclear plasma at *ignition* temperature and density, which is not possible using the current configuration of OMEGA. This is a key feature of relevance to a high gain test facility and the upgrade would provide an experimental capability not available elsewhere within the U.S. ICF program. The upgraded facility will allow a genuine test of direct drive and provide the basis for comparing direct- and indirect- drive for comparable energies in an imploding capsule.

To continue its mission to demonstrate the feasibility of laser fusion in accord with the NAS report recommendations, the University of Rochester requests authorization and funding for continued research operations in accordance with House Report 100-563 (HASC) which provides $12,900,000 for the University of Rochester of which $2,000,000 is provided to complete the preliminary design engineering and development and related studies for the upgrade to the OMEGA laser. Not included in this request is funding provided for DOE to support users of the National Laser Users Facility. We urge the Congress to provide DOE with funds for this purpose, and funds for this purpose were authorized in the House Armed Services Report (House Report 100-563).

Background

The University of Rochester has been involved in fusion research since the late 1960's. The Laboratory for Laser Energetics was established in 1970 as a center for the investigation of intense radiation with matter and has pursued an expanded research program in conjunction with industry since 1972. As the program evolved from a bench-scale effort to a laboratory scale, the University elected to meet a national goal of laser fusion feasibility using the joint support of the Federal Government, industry, utilities, the State of New York, and the University of Rochester. Approximately 34% of the total of $150,000,000 invested in the program since 1972 has come from non-federal sources. LLE is the only ICF program participant which continues to have significant amounts of broad-based non-federal support. Current sponsors of the Laser Fusion Feasibility Project include the Empire State Electric Energy Research Corporation, New York State Energy Research and Development Authority, Ontario Hydro, and the University of Rochester.

The Laboratory conducts basic physics experiments and research in support of the national ICF program, high-energy-density physics, plasma physics, and nuclear fusion technology. LLE operates the National Laser Users Facility which provides facility time for qualified researchers from other institutions who are approved for funding by DOE. Additionally, LLE provides student training and education at the Masters and Ph.D. levels as part of the fusion effort, thereby providing the only significant source of trained manpower in an area of national need.

LLE Program Summary and Program Accomplishments

There are two basic approaches to inertial confinement fusion: direct and indirect drive. In the indirect or "hohlraum" approach to fusion pursued by the large weapons laboratories, the driver beam energy is absorbed and converted to x-rays in a radiation case to implode a capsule. In the direct drive approach, a high-intensity laser pulse directly illuminates a bare thermonuclear capsule. Since no intermediate conversion process is required for the direct-drive approach, it is potentially more energy efficient than the hohlraum approach. LLE is the only ICF participant with the primary role to conduct direct-drive spherically symmetric implosion experiments. This point of view was supported by the National Academy of Sciences Report which observed that the direct-drive effort at the support laboratories, principally the University of Rochester and the Naval Research Laboratory is formulated to address the key physics issues involved in pellet compression and heating: efficiency of coupling (target coupling and fuel coupling), drive

uniformity, hydrodynamic stability, preheat issues arising from laser-plasma instabilities or x-rays, and target diagnostics.

Direct drive laser fusion provides a singular opportunity to reduce the minimum energy required to build a high gain ICF facility. As the principal focus of the DOE program on direct drive, research at LLE is addressing the important questions of driver and target performance needed to produce high density implosions.

OMEGA Experiments, Laser Operations, Diagnostic Development and Target Fabrication

The simultaneous achievement of high density and high temperature is the key requirement for the inertial fusion process to produce high gain. These conditions are required for thermonuclear *ignition*. Ignition refers to the rapid thermonuclear burning of fusion fuel of high density *and* temperature to trigger the fusion reaction. Once ignition occurs, high energy thermonuclear reaction products redeposit their energy in cold unignited fuel which surrounds the ignition region causing a thermonuclear burn wave to propagate. It is the propagation of the burn wave which is responsible for high gain. With direct drive, it may be possible to achieve high density target compression and thermonuclear ignition conditions with less laser energy than that required in hohlraum-driven implosions.

Early in 1988, LLE carried out measurements on direct-drive targets indicating compressions of 100-200 times liquid DT density of frozen-fuel layer (cryogenic) DT targets. These experiments were the result of an intensive effort which included (a) the improvement of the target-surface distribution of laser irradiation on the OMEGA laser, (b) the development and implementation of a new class of diagnostic instrumentation to measure high-density implosions, and (c) the implementation of cryogenic fuel layer technology on the OMEGA facility. These experimental results were certified by the Department of Energy through a committee established by DOE which consisted of technical representatives from the National laboratories.

The main elements involved in experiments and laser operations include experimental design which includes theoretical modeling, experimental implementation, analysis, and laser and target systems operation and maintenance. The strategy requires target design and implosion experiments, physics studies of the central ignition region of ICF capsules, control and understanding of hydrodynamic instabilities and plasma instabilities, and basic experimental studies of laser-matter interaction processes.

Experiments on the LLE OMEGA laser make use of an extensive array of nuclear, x-ray, optical and particle diagnostic systems. LLE maintains one of the most sophisticated diagnostic capabilities of any inertial fusion laboratory. Many of the diagnostic techniques used by the world's ICF research community were developed by LLE scientists. In addition, LLE continues to collaborate with the national weapons laboratories in the development and application of ICF diagnostics.

One of the most challenging aspects of the OMEGA high-density experimental program is the production of uniform solid or liquid DT layers in cryogenic fuel capsules. LLE made great strides in 1987 in developing techniques for uniform fuel layer generation and characterization. The innovative high-resolution interferometry technique developed by LLE for the laser uniformity program is now being applied to this effort.

While the UR/LLE program is unclassified, many of the physics issues common to hohlraum-driven targets are investigated on the OMEGA and GDL facilities including x-ray conversion, x-ray preheat, filamentation, parametric instabilities, and drive uniformity. As an example, UR/LLE experiments have demonstrated the significance of irradiation uniformity on x-ray conversion efficiency. Experiments will continue to be carried out to address these important issues; some of these experiments have been and will continue to be carried out in collaboration with the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory.

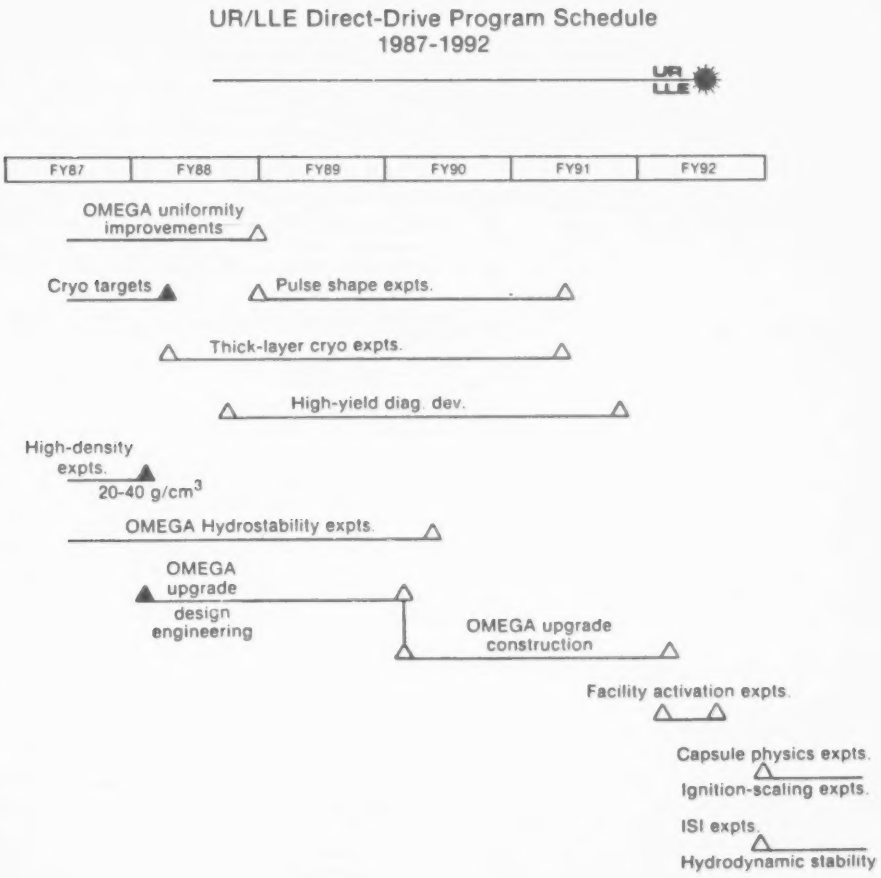
OMEGA Laser Development and Upgrade Engineering

LLE has made substantial contributions to fusion driver technology through important glass laser technology innovations. The Happer Committee Report[1] cited LLE, in a positive way, for **"investigation and demonstration of high efficiency frequency multiplication which now forms the basis of all the world's glass laser programs, and is certainly a major cause of the present upswing in ICF technical results and prospects."** Present and future efforts are focused on developing improved frequency conversion technology, specialized thin-film coatings, the incorporation of liquid crystal devices in high power lasers, the development of new laser glasses for fusion lasers, the development of high-efficiency Nd:glass amplifiers, and the development of high-power beam diagnostics.

Major improvements to the OMEGA laser system have eliminated many of the sources of laser irradiation nonuniformity and have provided a substantially improved target-surface distribution of laser irradiation. These improvements have resulted in high compression, fully diagnosed implosion experiments discussed above.

Modifications to the OMEGA facility in order to meet the ICF program requirements include implementation of pulse shaping systems, multi-beam pulse shape diagnostics, beam uniformity improvements, and the design, development, fabrication and activation of a 30,000 Joule upgrade to the OMEGA laser. An engineering design effort for this element is required to prepare a detailed design for the upgrade; this effort is expected to be carried out in FY88-89. The first phase of the effort will be carried out with funds provided for this purpose by the Congress in FY88. Full implementation of the OMEGA upgrade could begin in FY90 with completion by FY92, according to the schedule illustrated in Fig. 1.

The OMEGA upgrade project will be part of the effort to be carried out jointly by LLNL and LLE to plan and conduct feasibility studies to define the design specifications and to develop the technology required for the Laboratory Microfusion Facility to be activated in the late 1990's. Specifically, the OMEGA upgrade will be used to demonstrate the power amplifier components, and to develop and demonstrate some of the manufacturing processes necessary to verify the cost estimates for the LMF. The development of measurement and design techniques for improving the quality of glass drivers will be continued. The UR/LLE engineering division will investigate new and improved methods of producing optical components such as mirrors, polarizing elements, mechanical supports, phase plates, and other systems needed to operate large fusion-laser systems. In addition to creating a unique and essential experimental capability, the upgrade of the OMEGA laser will provide the opportunity to augment the ICF driver development effort and to test many advanced glass-laser concepts prior to a decision on a laboratory high-gain facility in 1992.



STATEMENT OF THE BIOMASS ENERGY RESEARCH ASSOCIATION

This testimony pertains to the Department of Energy R&D appropriations. The Biomass Energy Research Association (BERA) recommends that $27.7 million be provided for biofuels R&D, with the funds allocated in the following fashion:

Biomass Production Research	$ 7,000,000
Thermochemical Conversion Research	
Biomass	4,500,000
Municipal Solid Waste	4,500,000
Biochemical Conversion Research	7,000,000
Regional Programs	4,000,000
Capital Equipment	700,000
	$27,700,000

Thank you Mr. Chairman and members of the Subcommittee. My name is Donald Klass. I am President of BERA. BERA is a non-profit association that was founded in 1982 by biofuels researchers and companies that are conducting biofuels research. Our objectives are to promote education and research on renewable biomass- and waste-to-energy systems that can be economically utilized by the public, and to serve as a source of information on policies and programs for our members and industry.

We appreciate the opportunity again to present BERA's recommendations for the federal biomass and municipal waste R&D budget, and would like to commend the Subcommittee for its interest in and understanding of the role of biofuels in our national energy policy. Before presenting BERA's position and recommendations on the fiscal 1989 budget, I would briefly like to point out the unique features of biofuels, summarize their current contributions to energy demand, and indicate their potential.

Unique Features of Biofuels

- Biofuels are the only renewable resource capable of supplying substitutes for fossil-derived liquid, gaseous, and solid fuels, as well as heat and electricity, to all areas of the Nation and to all four sectors of the energy economy — residential, commercial, industrial, and transportation — from local resources.
- The widely dispersed nature of biomass and waste feedstocks for conversion to biofuels greatly improves our national security by providing a secure energy supply.
- Application of biofuels technologies to wastes offers opportunities for combined waste disposal-energy recovery-conservation systems.
- Biofuels are one of the most environmentally benign energy options and contribute little or nothing to acid rain, the greenhouse effect, or ozone layer destruction.
- Virtually all basic organic chemicals — including plastics and petroleum-derived products — can be manufactured from biomass and wastes thereby displacing and conserving depletable fossil feedstocks.
- Biofuels are the only renewable resource that can provide desperately needed local jobs and economic development in rural America.

Present Contribution of Biofuels

- In 1986, biofuels contributed about 3.0 quad of energy in all forms, or about 3.9% of our national primary energy demand of about 77 quad.
- In barrels of oil equivalent per day (BOE/d), the contribution consisted of 1.3 million BOE/d from wood fuels; 108,000 BOE/d as heat, steam, and electricity from municipal solid wastes; 33,000 BOE/d as liquid alcohol fuels for vehicles; and 5,600 BOE/d as substitute natural gas from solid waste landfills and municipal sewage.
- At a price of $18 per barrel of oil equivalent, biofuels currently retain in the U.S.A. about $9.5 billion per year that are not expended on oil imports thereby having a strong beneficial impact on our massive trade deficit.

- Biofuels provide excellent regional benefits — 80 cents of every dollar spent on biofuels in a given region stays in that region, while 80 cents of every dollar spent on petroleum leaves the region.
- Utilization of biofuels supplies local jobs and income such as the 78,000 jobs and $1.9 billion in income in the Northeast that resulted from fuel wood usage in 1985, both of which have been projected to double by the year 2000.

Potential Contribution of Biofuels

- The theoretical maximum potential energy available each year from biomass and wastes about the turn of this century has been estimated to range up to 54.9 quad, or about one half of our projected energy consumption at that time.
- Municipal, industrial, and agricultural wastes are currently estimated to have an energy potential of about 15.0 quad per year, and wood and wood wastes are currently estimated to have an energy potential up to about 25.0 quad per year.
- Utilization of excess capacity croplands of up to 160 million acres projected beyond the year 2000 could produce up to 10.2 quad per year of energy crops. This could open the way to new food, feed, and fuel product flexibility to provide more stability to market prices, create new markets for the agricultural sector, and reduce federal farm subsidy payments.

FISCAL 1988 BUDGET DISRUPTS PROGRAM BALANCE

It is clear that biofuels can make a major contribution to our Nation's energy supply. However, based on the outcome of the fiscal 1988 budget, which we all realize was fraught with necessary reductions and problems that were not faced before, the budget provided for R&D by the legislative conferees makes it extremely unlikely that the contribution of biofuels will increase from its present level. This situation is compounded in the fiscal 1988 budget by inclusion of a large amount of directed funding.

Biofuels R&D funding was subjected to the second largest reduction below the fiscal 1987 expenditures of any of the renewable energy options — 29.1%. This was substantially larger than the overall 22.0% reduction for renewables, and occurred even though biofuels currently make a contribution to our national energy demand that is about 5,000 times more than that of photovoltaic, wind, and solar energy together. Indeed, biofuels contribute an amount of energy about the same as that of the total nuclear energy contribution, 3.0 quad per year for biofuels and 4.5 quad per year for nuclear energy. Yet funding for nuclear fusion research alone in fiscal 1988 was about 20 times more than the appropriation for environmentally clean biofuels.

Another major problem created in the fiscal 1988 biofuels appropriation is the allocation of up to 86% of the total appropriation on projects that were selected by the conferees. Not only does this disrupt the balanced program that was in progress in fiscal 1987, it has the effect of eliminating several important R&D programs from further development. BERA has consistently recommended a balanced research program on biomass production, thermochemical conversion, biochemical conversion, and regional technology transfer activities. Conversion has now been reduced to less than 20% of the total appropriation of $17.055 million. Without development of efficient and economic conversion processes for production of biofuels, their real potential can never be realized.

The conferees also allocated a large portion of the appropriation to project areas that have little or no relationship to biofuels and that are not mentioned in the multiyear R&D plan for biofuels developed by DOE. The end result is that DOE's biofuels program managers are now required to administer non-biofuels programs. The fiscal 1988 appropriation language effectively directs the biofuels program managers to expand their mission into other areas at the expense of several on-going biofuels projects that will not be easy to start again.

BERA RECOMMENDS $27.7 MILLION FOR FISCAL 1989 BIOFUELS R&D
A Balanced Program of Production, Conversion, and Technology Transfer

The members of BERA have been asked for their views on the fiscal 1989 biofuels R&D budget; the BERA Board of Directors have reviewed the results of this survey; and the following recommendations represent a distillation of our position on the R&D areas and funding levels we urge you to include in next year's budget. As in the past, about one half of our budgetary recommendation is allocated to conversion because we believe that it is the foundation of a balanced program to develop advanced systems for the production of liquid and gaseous biofuels. As noted above, we believe the real potential of biofuels can never be realized without the development of efficient and economic conversion processes.

Also, I would like to emphasize that the industry-cofunded medium-Btu gasification demonstration plant that BERA has supported for several years is not mentioned in our recommendations. Five million dollars have already been separately appropriated for this scale-up program and will therefore not affect the R&D budget for 1989. This program was scheduled for initiation in fiscal 1988, but the solicitation was withdrawn. BERA urges that the project be rescheduled for a second solicitation and start-up as early as possible.

I would now like to summarize BERA's biofuels recommendations for fiscal 1989.

Biomass Production

Land- and/or water-based biomass grown and harvested specifically for biofuels represent a long-term approach to energy plantations that can supply large amounts of fossil fuel substitutes. Considerable progress has been made on efficient short-rotation intensive-culture tree production methods, on "wood grass" in which selected wood cuttings are planted at high densities and harvested as a perennial like grass, and on the growth of aquatic species in low-grade saline water for liquid fuels and chemicals or in municipal wastewater as a low-cost, combined wastewater clean-up and biomass production system. In addition, research on tissue culture techniques and the application of genetic engineering methods to low-cost energy crop production, and the evaluation of herbaceous plants as sources of biofuels nationwide have shown promise. This work should be continued as an integral part of the biofuels program.

BERA recommends that $7,000,000 be directed to continue biomass production research.

Thermochemical Conversion Research

Thermochemical conversion research to produce energy and liquid and gaseous fuels at competitive costs is the prime target of this program component. Laboratory- and pilot-scale research on municipal solid wastes and biomass has established the technical feasibility of several advanced combustion, gasification, and liquefaction processes, and basic research is in progress to improve our understanding of the mechanisms of conversion and the formation of pollutants, especially from municipal solid waste-energy recovery facilities.

Direct liquefaction of municipal solid wastes, wood, and herbaceous feedstocks via production of biocrude and its subsequent upgrading by advanced catalytic processes to gasoline and diesel fuels show promise. Continued research is expected to increase the overall liquid yields to the point where the gasoline costs are competitive with those of petroleum-based gasolines. Thermochemical liquefaction of wastes and low-grade biomass for the production of low-cost fuel ethanol also show promise and merit investigation.

Continued research on the thermochemical gasification of wastes and biomass has resulted in the development of advanced process designs and reactor configurations that maximize yields and provide optimum product dis-

tributions. For example, selected operating conditions can produce medium-Btu gas or optimum synthesis gases for manufacture of ammonia, methanol, methane, gasoline, or diesel fuels. This work has been performed at the laboratory and pilot scales and is ready for demonstration. Some research is still needed to perfect the feeding of diverse biomass and waste feedstocks at elevated pressures, the elimination of tars and particulates from product gas streams, and the recycling of residuals. Research is also recommended to investigate some of the leads that have been discovered for the direct thermo-chemical conversion of biomass to high-Btu gas at near-atmospheric pressures.

In combustion research, a need still exists for improved solid waste incinerators that meet environmental requirements and cost goals. Research should be focused on systems that can be used for economic disposal of municipal solid wastes in small communities.

BERA's members feel that thermochemical conversion research on biomass and municipal solid waste should be funded equally. Municipal solid waste disposal is a nationwide problem that needs our immediate attention, while biomass offers a long-term approach to development of large-scale supplies of biofuels.

BERA recommends that $9,000,000 be directed to continue thermochemical conversion research on biomass and municipal solid wastes.

Biochemical Conversion

Application of the rapidly advancing field of biotechnology to the conversion of low-cost biomass to liquid and gaseous fuels such as ethanol and methane-containing fuel gases has made great progress and should be continued. Process evaluations by experts have identified key opportunities for economic pay-backs with biochemical conversion systems, and new genetic engineering and other emerging biological approaches have made significant advances. Research needs have also been identified that should be addressed to increase our understanding of the biochemical and microbial interactions that occur in fermentation processes.

At this time, the cost of ethanol from biomass is approaching that from corn, and with continued research, we are confident the cost can be made competitive with fuels at today's prices without tax exemptions, thereby lessening our dependence on foreign supplies of petroleum while stabilizing fuel prices. Furthermore, the technical advances made through this program will benefit the competitive position of the United States in biotechnology world markets. Future research should be concentrated on conversion of low-cost feedstocks such as lignocellulosic wood wastes by high-yield acid- and enzyme-catalyzed hydrolysis processes, on development of innovative fermentation product separation schemes that have the capability of producing low-cost fuels and by-products, on the development of organisms that can metabolize the hemicellulose components in the feedstocks, and on the utilization of the lignin fractions as octane enhancers and chemicals.

Biochemical conversion systems are unique in that they can directly produce methane, the major component of natural gas, from the full range of low-cost biomass. Additional research is required to identify and develop organisms that increase both methane yields and gas production rates. Research is also needed to develop novel fermentor designs that permit higher feedstock concentrations and smaller reactor volumes, and therefore lower capital costs. This research is expected to lead to practical methods for producing substitute natural gas from low-cost biomass. And in the case of feedstocks such as municipal wastewaters, low-cost integrated biomass production-waste stabilization-methane production systems are expected to evolve from continued research.

BERA recommends that $7,000,000 be directed to continue bio[illegible]al conversion research for liquid and gaseous biofuels production.

Regional Programs

Last year, BERA recommended that the Regional Programs established by Congress in 1983 be expanded. We are happy to note that DOE has now initiated the fifth regional program — the Western Regional Program — by incorporating all remaining states in the Continental U.S.A. into the fifth region. These programs make a concerted effort to transfer the technology resulting from the R&D programs to the private sector and are the link between the laboratory and commercialization. The Regional Programs should be sustained because the transfer of the research results to technology users and the creation of a strong national biofuels industry are the ultimate goals of the biofuels R&D program.

BERA urges that funding for the Regional Programs be maintained at $4,000,000.

Recommended Budget

Over the last three years, consolidation of the biomass, alcohol fuels, and municipal solid waste research programs into a single biofuels program and a continually reduced appropriation made it extremely difficult for DOE to sustain a balanced R&D program. The fiscal 1988 appropriation presented additional problems — a high proportion of a limited budget allocated to earmarked projects and expansion of the biofuels program to include non-biofuels research. In view of these apparent difficulties, BERA strongly urges Congress to appropriate a budget of $27.0 million as allocated above for fiscal 1989, and an additional $0.7 million for capital equipment.

Program Evaluation

I was asked last year about the multiyear plan that we recommended be updated annually. This plan now exists and is being reviewed by BERA's Board of Directors and others. After the review is completed and revisions are made, if necessary, BERA recommends that the plan be suitably updated by DOE each year and submitted along with the Administration's budget for the following fiscal year. BERA further recommends that comments and suggestions be solicited from appropriate parties at least 60 days prior to submission.

BERA SUPPORTS S. 1554 — RENEWABLE ENERGY AND ENERGY CONSERVATION TECHNOLOGY COMPETITIVENESS ACT OF 1987 AND H.R. 4226 — RENEWABLE ENERGY AND ENERGY CONSERVATION COMMERCIALIZATION AND DEVELOPMENT ACT

Last year, I pointed out that a sustained and targeted DOE biofuels program, i.e., a program not plagued with large budgetary fluctuations and shifts in research emphasis, will help provide the technology we need when and where we need it. BERA is happy to note that Senator Wyche Fowler,Jr., (D.-Ga.) and colleagues have submitted a bill (S. 1554) that would eliminate a major roadblock that has confronted biofuels R&D for years. S. 1554 would provide a long-term stable environment for renewable energy technology R&D through the establishment of long-term goals and multiyear funding. BERA strongly supports this bill and urges all Congressmen, who are interested in seeing the ups and downs of biofuels and other renewable energy R&D come to a halt, to vote for passage of this legislation. Representatives Philip R. Sharp (D.-Ind.) and Marilyn Lloyd (D.-Tenn.) have introduced a similar bill (H.R. 4226) that includes multiyear funding for renewable energy R&D.

STATEMENT OF THE INSTITUTE OF GAS TECHNOLOGY

As President of the Institute of Gas Technology, I feel I can bring you a unique perspective on energy, different from that of an energy producer, consumer, regulator, or policymaker. As a not-for-profit organization, the Institute of Gas Technology has consistently pointed out that a balanced distribution of funding across the entire research and development process is crucial. Few would plan a new highway for both sides of a river without allocating sufficient funds for a connecting bridge: The effectiveness of a research program will be undermined if promising programs identified by fundamental research are left to die before industry has enough information to judge the commercial applicability of the ideas.

Since last year, the energy situation has not improved overall. Although oil prices have recovered somewhat from their 1986 free fall, domestic production continues to decline. Last year, the Office of Technology Assessment warned that, if prices stayed in the $12-$18/bbl range, domestic production would be likely to drop from 9 million bbl/day in 1985 to 6-7 million by 1990. Meanwhile, imports continue their steady rise, accounting for 44% of our present oil supply.

Last year, the U.S. spent an estimated $50 billion on oil imports, almost a third of the country's trade deficit. Ultimately, our growing dependence could allow OPEC to regain power in the oil market to affect U.S. economic stability and national security.

A strong and balanced energy research program is a nation's insurance policy against the vagaries of the free market and the whims of those who can withhold supply to achieve political objectives. The technologies that emerge from a sustained energy research program can help to reduce our vulnerability to external threats, both economic and military, reduce domestic costs of energy, provide industry with the energy it needs to compete in future world markets, and help the country achieve a reasonable balance of trade.

We do not subscribe to the simplistic view that energy is a commodity to be traded. We believe that energy is special. Energy is the fundamental driving force for human advancement, and the foundation of an industrialized society. Thus, while we can substitute some commodities for others, we cannot do without energy. We must understand that energy is a national priority, like health, environment, and defense, and that the necessary support for R&D, particularly in the long-term supply of energy, must come from the public sector.

In its recent report, "R&D Initiatives for Energy Competitiveness," DOE's Energy Research Advisory Board argues that the effective use of energy in a country's economy is an important determinant of its international competitiveness. This includes its performance in reducing energy intensity and oil use, diversifying energy sources, and promoting new energy technologies. ERAB claims it is in these areas that other nations are outperforming the U.S., thereby gaining a competitive advantage.

And while energy R&D can help to mitigate the effects of an oil supply disruption or the threat of disruption, the private sector has little economic incentive to conduct energy R&D. Thus, the government has a critical role to play both in supporting R&D and in developing the institutional framework that will encourage industry to do so. "We believe that the national interest would be served by a faster pace of development and deployment of energy technology," is ERAB's conclusion.

This does not mean we should take a shotgun approach to energy R&D funding nor effect a repetition of past swings from

indifference to crash programs. A successful national energy R&D program requires commitment and discipline: commitment by the government to provide appropriate levels of funding, and discipline by the R&D community to translate that commitment into an orderly execution of the development plan.

In a sensibly planned energy future, we see a need for research beyond what is proposed by DOE for funding in FY'89, and IGT specifically recommends the following:

Geopressured Resources

- o $10.4 million for the continuation of existing contracts for scientific data acquisition and analysis from the Pleasant Bayou and Gladys McCall wells, and for the rehabilitation of the Hulin well.

Geopressured/geothermal energy involves the coproduction of natural gas and hot brine. It is well known that there are thousands of trillions of cubic feet of gas present in geopressured reservoirs in the Texas/Louisiana Gulf Coast. In order to produce cost competitive natural gas, and thus attract commercial risk capital, there are technical issues that need to be resolved. Since 1975, the Department of Energy has been funding a research project utilizing three specially designed and drilled geopressured/geothermal wells: Gladys McCall, Pleasant Bayou, and Hulin. The program includes production testing coupled with scientifically sound data collection and analysis necessary to determine the quantity of hydrocarbons produced with the brine; the thermal and hydraulic energy content of the produced brine; the best methods to produce electricity from both the hydrocarbons and the energy content of the brine; and optimum techniques to treat the brine to inhibit corrosion and scale formation, remove solids, and dispose of the produced brine in a environmentally sound manner.

The research carried out at Gladys McCall and Pleasant Bayou has been very successful. Scientific tests are underway at Gladys McCall to determine reservoir production mechanisms. The well has produced approximately 21 million barrels of salt water with solution gas, yielding valuable reservoir data, gas production history, successful scale inhibition methods, and disposal well history. This well is in a wind-down phase and pressure buildup tests will continue over the next year.

The Pleasant Bayou well was tested initially and experienced severe scaling and a tubing failure. The well has now been restored successfully to operating condition, and flow testing was resumed in December. The cost shared EPRI hybrid power plant will shortly be installed and tested for one year.

Of the $10.4 million we are suggesting for the Geopressured program, $3.0 million would be used to clean out the Hulin well, if funds for this purpose are not reprogrammed by DOE.

The Willis Hulin Well, in Vermillion Parish, Louisiana was drilled to 21,546 feet by Superior Oil Company in 1979. Superior began gas production and sales in September 1981 from thin shaly sand zones at a depth of about 21,100 feet. Production ceased in April 1983 because of pressure decline, leading to water and condensate blocking the bottom section of the well. Because the well contains several geopressured geothermal reservoirs, Superior donated the well to DOE. Since DOE took over ownership of the well in early 1984, program funding has allowed only the monitoring of pressures in the annuli of the well, and the payment of insurance and lease expenses. Weekly checks of pressure in the annuli show that the pressures are increasing.

We are concerned that if pressures are allowed to continue to increase, internal damage to the well could result, greatly increasing the cost and risk of entering the well to correct the problem. If the pressure buildup is ignored, the well could ultimately blow out. Because the well is located approximately

three miles from Vermillion Bay, a blowout would result in salt water damage to farmland immediately adjacent to the well and contamination of surface water and ground water flowing into Vermillion Bay. In addition to environmental damage, the cost of controlling a well that has blown out is much greater than a normal workover of a well. With time, the mud in the well will continue to deteriorate and any plugs already present from mud consolidation will become thicker, further aggravating the difficulty of workover. Consequently, a successful cleanout operation will become more difficult and expensive to achieve the longer the well is left dormant. The Hulin well must be cleaned out before either recompletion or a plugging and abandonment operation.

The DOE acquisition of the Hulin well was based on the intent to use the well for design tests. The reasons for testing the Hulin well are still valid today. A long-term production test of the Hulin well would be of particular value and interest to industry because previous DOE geopressured well tests have all been from reservoirs in the 12,000 to 15,500 foot depth range. Test data from 20,000 feet would allow industry to evaluate the increased energy recovery versus higher drilling costs at the greater depth.

Biofuels and Waste

- $1.0 million for a refuse-derived fuel (RDF), pressurized gasification project utilizing the IGT RENUGAS process.

The disposal of municipal solid waste is becoming an increasingly crucial issue in virtually every community. U. S. cities and towns generate nearly 150 million tons of municipal solid wastes annually; approximately 3 to 4 lbs per person per day. At an average bulk density of 5 lbs/cubic foot nearly 60 billion cubic ft/year of material is handled in a variety of ways. (This is equivalent to a pile of garbage stretching from the Capitol steps to the Washington monument, all across the mall, and about ten times the height of the Washington monument.) Over 90% of the MSW is landfilled at present. There are several problems with land disposal of wastes. Leachates from sanitary landfills have the potential to contaminate the groundwater which supplies over half of our Nation's drinking water supply. Furthermore, a limited volume of landfill capacity is available. Awareness of the problems associated with land disposal of wastes has resulted in the Resource Recovery Act, Superfund, the Clean Water Act, and the Safe Drinking Water Act. This legislation tightens the restrictions on waste disposal, which will result in higher costs for disposing of both industrial and municipal solids wastes.

Nearly 20% of the 190 billion gal/day of water used for urban, rural, and agricultural uses is derived from groundwater. Dependence on groundwater has increased three-fold in the last three decades, and the demand for groundwater is expected to increase steadily. The urgent need to protect our groundwater supplies from the landfill leachates, coupled with increasing costs for landfilling creates an urgent need to develop methods that will minimize the volume and leachability of materials that must be landfilled. It is estimated that the fuel required to transport 90% of the MSW, over a 20 mile average distance, costs the nation about a billion dollars annually. The additional landfill costs, to comply with EPA disposal guidelines, can amount to as much as $4 billion annually. A combination of these factors have led to shutting down about 50% of nearly 18,000 landfill sites over the past 20 years.

Because a major component of municipal solids waste is combustible material, waste to energy plants offer a viable alternative for reducing the volume of solids requiring disposal.

At present the energy recovered is primarily achieved by mass burning the MSW, combusting refuse-derived fuel (RDF), and by burning the fuel gas derived from natural bacterial action in landfills. In a mass burn facility, the municipal solids waste is processed to remove recoverable materials such as ferrous metals. Even so, a substantial portion of metals and chemicals can find their way to the incineration step. The flue gases from a mass burning facility may contain as many as 20 to 30 inorganic compounds. Some of these are suspected carcinogens. The heat produced in incineration is used to generate steam for the production of power or for use in district heating systems for industrial applications. The bottom ash from the incinerator, non-combustible materials, and the fly ash from the stack gases are then landfilled.

There are approximately 194 waste-to-energy facilities in 44 states. Over 72% of the facilities have had long shutdowns for reasons other than routine maintenance. For the mass burn facilities, the reasons for shutdowns are usually equipment related problems attributed to the ash contained in MSW and RDF. For an industrial facility which requires steam for power production or process uses, the boiler is one of the most critical pieces of equipment. Therefore, these potential users will not be eager to use a material that increases maintenance and shutdown time even if the fuel is much cheaper than coal.

Gasification of RDF is an attractive use for the material. In a RDF facility, garbage is shredded and separated by air classification. The lighter, combustible materials (mostly paper products) are passed through a magnetic separator to remove ferrous metals for recovery, and the remaining materials are usually pelletized. The fuel gas is a higher form of energy than that generated by combustion of wastes, and it could be used on-site or transported over short distances to supply industrial energy needs. Gasification in a pressurized reactor significantly reduces the cost of gas purification and pressurized gasifiers can be efficiently coupled with a gas turbine and steam turbine for combined cycle power generation. The production of power by combined cycle is a highly cost effective way to recover the energy from RDF. A gasification plant can be designed from the onset to manage the ash and other pollutants in closed vessels, thus improving the air quality near a waste gasification facility.

IGT has developed the pressurized, fluidized-bed RENUGAS process for the gasification of biofuels, and has successfully applied it to selected industrial wastes. The modification of the RENUGAS process for the gasification of RDF offers the advantage of very high conversion of carbon to a fuel gas at a pressure high enough for efficient gas turbine operation. The production of a valuable product, electric power, in an efficient combined cycle power plant will improve the economic viability of RDF plants by providing a valuable market for their product.

I will be happy to answer any questions you might have regarding our proposed program. Thank you for this opportunity to submit my testimony.

STATEMENT OF REV. T. BYRON COLLINS, S.J., AND REV. WILLIAM L. GEORGE, S.M., ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY FOR FEDERAL RELATIONS

We are Rev. T. Byron Collins, S.J. and Rev. William L. George, S.J., Assistants to the President of Georgetown University for Federal Relations. Thank you for this opportunity to testify.

We appear before you today to share with you an exciting and innovative energy project which is now underway at Georgetown University. Under cooperation with Energy Dominion and Potomac Energy and Power Company (PEPCO), the University has embarked on a $60 million Cogeneration Facility Project. Our goal is to design and construct a cogeneration facility which has the capacity to satisfy both current and future campus energy needs. In addition, surplus electricity which is generated at the facility will be used by PEPCO to fulfill power demands in the surrounding community.

Current plans are to integrate a cogeneration system with the University's present power plant facilities. These facilities include a Fluidized Bed Boiler, one of the first of its kind, which was built with a grant from the Department of Energy. Three separate generators will be used to provide steam, cooling and electricity to campus buildings, classrooms, and dormitories as well as Georgetown University Medical Center.

It is our pleasure to inform this committee that the Georgetown University Cogeneration Facility Project will be entirely funded by the private sector. We are not requesting any Federal assistance. There are circumstances when the public and private sectors can coordinate, cooperate and communicate in order to best achieve our common goal of the wise use of precious natural resources. With imagination and know how we can find other similiar worthwhile projects. The technology of cogeneration shows tremendous promise as an efficient way to produce energy, which will prove invaluable in our nation's future. This is the only way for America to maintain its competitive edge in the global society.

We thank this committee for its foresight and its continuing commitment to worthwhile energy and water projects. On behalf of Rev. Timothy S. Healy, S.J., we thank you for the opportunity to testify.

GEORGETOWN UNIVERSITY
COGENERATION FACILITY PROJECT

BACKGROUND

Under the Public Utilities Regulatory Policies Act (PURPA) of 1978, opportunities exist for private owners to produce and sell electricity to local utilities in conjunction with their own production and use of thermal energy. Georgetown uses large quantities of steam year-round for heating and cooling and is ideally sited to deliver electricity to growing urban loads of the local servicing utility -- PEPCO. The University is now

pursuing a cogeneration project, first, as a means to back up or replace its aging steam plant; second, to provide increased capacity to heat and cool additional buildings under construction or planned for construction; and third, to gain economic benefits from the production of steam and electricity concurrently.

HISTORY

Early in 1986, the University began to investigate the technical and economic feasibility of several configurations of combustion and steam turbines for cogeneration to be sited at the existing utility plant near McDonough Arena. Initial results were promising, and the University auditors, Coopers and Lybrand, were requested to run economic models for verification of the predictions. By early 1987, the University determined that potential benefits warranted future testing of the predictions in the market place. In May 1987, a request for proposals (RFP) was sent to nineteen prospective cogeneration developers, and six subsequently submitted proposals. The RFP specified the successful proposer would bear the full cost and risk of building and operating a cogeneration facility, and it identified economic and other factors for selecting the proposal most beneficial to the University. In December, Energy Dominion, Georgetown, a joint venture of Energy Research Logistics and Dominion Energy, subsidiaries of CSX Transportation and Dominion Resources, Inc., respectively, both of Richmond, was selected as the prospective project developer. The commitment to build the facility is contingent on the results of further interim development and study and final approval by the Georgetown University Board of Directors.

DESCRIPTION OF PROJECT

The project is to be built in the northeast quadrant of the utility plant, now occupied by cooling towers, and on a strip of

land just north of the plant (See tabs A and B). Underlying rock will be excavated to provide a basement level. The principal equipment is to be a 40 to 50 MW gas turbine driven generator, a heat recovery steam generator and a 20 to 25 MW steam turbine driven generator. All cogenerated electricity will be delivered to the electric utility system with the University continuing to buy its power from PEPCO. Steam will be purchased directly from the cogeneration plant owner-operator.

The technical criteria require the project to conform to applicable regulations on zoning, emissions and noise. The project must also satisfy a University requirement that it not degrade the quality of the campus environment. It is believed that these criteria are achievable with available technology and existing hardware.

PROJECT SCHEDULE

The value of the cogeneration project to PEPCO is related to its ability to provide capacity and thus delay the construction of new large generating facilities by the local utility. PEPCO is now planning to initiate new construction to satisfy future load growth by the early 1990's. The Georgetown University project is timely in that it would begin operation near the end of 1990 and thus allow PEPCO to defer a portion of their own construction otherwise needed to meet this demand.

A mutual letter of intent has been executed granting exclusive development rights to Energy Dominion for six months. The period may be extended by the University as progress and circumstances dictate. Preliminary engineering, permit and approval applications and negotiation of electricity and gas rates will take place during the interim development period. The

outcome will be either a decision to proceed or a decision to stop further action on the project and should be forthcoming by July or August, 1988. If the project proceeds, on-site construction could begin late in the summer of 1988 after Board approval and continue into 1990 when the installation and startup of major equipment will precede the commencement of continuous long-term operation.

STATEMENT OF THE ALABAMA POWER CO.

Mr Chairman, members of the Subcommittee, I am pleased to have this opportunity to present the views of the Alabama Power Company on the FY 1989 budget request for the Department of Energy's photovoltaic research and development programs.

I am Herbert M. Boyd, Technology Management Coordinator at the Alabama Power Company, a subsidiary of The Southern Company.

First I want to thank the Chairman and members of the Subcommittee for supporting the Department of Energy photovoltaic research and development program during past years.

The Department of Energy budget request for FY 1989 of $24.18 million for photovoltaic research and development is 31% lower than the $35 million appropriated for the current fiscal year. I fully realize that the administration's and Congress' goal for deficit reduction places severe limits on FY 1989 appropriations. However, the proposed $24.18 million is not adequate to carry on the minimum research and development programs that are essential for photovoltaics during FY 1989. The House of Representatives included $35 million for the photovoltaic research and development program in the Energy and Water Development Appropriations Act, 1989, H.R. 4567. This increase above the budget request is needed and we recommend a minimum appropriation of $40 million with $36 million designated for core research programs and $4 million for PV USA.

The electric utility industry will be seeking new sources of energy by the mid-1990s and renewable energy technologies should

be available for consideration at that time to help meet the United States' energy independence goal. We believe that the renewable energy technology that offers the greatest promise as a source of economic, clean energy for the utility industry is photovoltaics. This belief is demonstrated by the Alabama Power Company building and placing in operation the world's largest amorphous silicon thin-film photovoltaic grid connected array. This 100KW demonstration unit is now producing enough power at the time of our system peak to supply the energy for 25 homes.

In addition to the $1 million spent on the above installation, Southern Investment Group, another subsidiary of The Southern Company, has invested $6.1 million in a joint venture with Chronar Corporation to build and put into operation a 1MW amorphous silicon photovoltaic cell manufacturing facility in Birmingham, Alabama.

The Department of Energy research programs have enabled the domestic photovoltaic industry to make steady progress in developing a clean, competitive energy supply alternative. Today photovoltaics are competitive with other energy sources at remote sites. The Coast Guard has installed more than 9,000 photovoltaic aids to navigation worldwide that will save an estimated $2 million per year in maintenance costs and between $2 and $3 million per year in battery costs. However, even though many advances have been made, there is still important research needed to further increase conversion efficiencies, improve reliability and reduce costs in order for photovoltaics to be a viable energy source for central power applications.

The United States is in a race with Japan, West Germany and other countries in the development of photovoltaics for central power applications by utilities. The winner of this race will be the country with the best technology and lowest cost and that country will have a worldwide market for its photovoltaic products. The U.S. utility industry does not want to import from other countries the photovoltaic products needed to meet the energy demands of the 1990s.

However, as Department of Energy funding for photovoltaic research and development fell from $153.2 million in FY 1981 to $35 million for FY 1988, research and development funding in Japan, West Germany and other countries has increased. For example, Japan increased funding for photovoltaic programs from less than $5 million in 1980 to $53 million in 1988. Included in these Japanese fundings are expenditures for amorphous silicon research and development, which increased from $2 million in 1980 to $23 million in 1988. During the same period, United States expenditures for amorphous silicon research and development increased from $5 million in 1980 to $10 million during 1987 but fell to only $8 million in 1988.

Since 1981 amorphous silicon thin-film photovoltaics have increased from 3% of total photovoltaic world sales of 5MW to 40% of 29MW. We believe that amorphous thin films offer the best potential for central power applications for the utility industry and it is the technology we are using in our system. During the past year, with help from Department of Energy funding, efficiencies of more than 11% have been achieved with new thin-film materials. However, as methods are found to increase efficiencies in the laboratory, additional research and funds are needed to be able to use these new materials in low-cost, reliable, large area submodules. This research needs to be done in the United States.

In order for the United States to maintain the lead in developing more effective photovoltaics, we support the industry's request for a minimum of $40 million for FY 1989. We recommend $36 million for core research programs and $4 million, as a separate line item, for PV USA. Within the core programs we believe $30 million should be allocated for thin-film research and $6 million for collector research.

Thank you.

STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association, the national service organization representing more than 1,750 local publicly owned electric utilities throughout the country, submits this statement to the Subcommittee on Energy and Water Development concerning FY 1989 appropriations.

Power Marketing Administrations

APPA is pleased that congressional opposition to sale of the federal power marketing administrations (PMAs) has forced the Administration to downscale its efforts. The Administration's proposed budget no longer calls for the sale of all five PMAs but retains the two carryovers from last year: sale of the Alaska Power Administration (APA) and the study of sale of the Southeastern Power Administration (SEPA). APPA remains opposed to selling these valuable assets.

Legislation to authorize a study of the sale of SEPA was introduced last year in both the House and Senate. This legislation has generated strong opposition from within the region, as well as across the country. APPA appreciates this subcommittee's direct involvement in enacting the privatization study prohibition in P.L. 99-349 and its leadership in preserving the federal power program. APPA requests that the funding prohibition on studying the sale of the PMAs continue as a provision of permanent law and that the pending legislation for studying the sale of SEPA be rejected.

The Alaska Power Administration was not included in the prohibition contained in P.L. 99-349. APPA remains concerned that sale of this agency may proceed in a manner inconsistent with the interests of either ratepayers or taxpayers, and will continue to monitor proposals for the APA sale and to keep the subcommittee informed of our concerns.

The Administration appears to have relented in its effort to alter ratemaking and repayment policies for the PMAs. The subcommittee has repeatedly included in its appropriations bill statutory language prohibiting the study or implementation of any noncost-based method of pricing federal power. APPA respectfully requests that this provision be included in this year's appropriations bill.

While no legislative or administrative efforts to change the repayment policies of the PMAs are currently under way, APPA has deep reservations about the intent of the "financial improvement practices" study for the PMAs recently initiated by the Office of Management and Budget. It is appropriate to review PMA financial and repayment practices periodically in an effort to improve efficiencies, lower electric rates, and ensure timely repayment of the federal investment in these facilities. OMB's past initiatives and its purported justification for this study, however, give reason for serious concern that the study's purpose is to renew pursuit of arbitrary rate increases for federal power customers.

OMB justifies the study as an attempt to make PMA financial practices conform with the practices of the electric utility industry in general. But this justification fails to recognize the differences in purpose, scope, and operation between the PMAs and regulated electric utilities. For instance, while the financial practices of an investor-owned utility can be driven by a variety of objectives, the objective of the PMAs has been statutorily established as providing electricity at the lowest possible cost consistent with sound business practices.

It is critical that the mission and policies of the PMAs remain intact, and that any change in financial practices be preceded by careful and cautious review. APPA intends to monitor closely the progress and recommendations of this financial study and will keep the subcommittee informed of its views.

Bonneville Power Administration Construction of Third AC Intertie

APPA requests the subcommittee's support for restoring FY 1988 and 1989 funding to enable the Bonneville Power Administration to use its borrowing authority to begin construction of facilities for the Northwest portion of the Third AC Intertie.

The budget request eliminated borrowing authority for this project because a study of potential nonfederal participation in construction of the line is now under way. But beginning construction of intertie facilities will neither prevent nor prejudice nonfederal participation in the transmission line. Failure to begin work in FY 1989 could, however, cause a two-year delay in completing the line.

The Third AC Intertie will facilitate electricity sales between the Northwest and California. In normal water years, existing transmission capacity is inadequate to transmit all of the Northwest's surplus energy during winter and spring streamflows. Thus the federal hydrosystem spills billions of kilowatthours worth of water while California burns enormous amounts of oil and gas, and spends hundreds of millions of unnecessary dollars, to generate electricity. Building the intertie means vitalized economies in the Pacific Northwest and California, conservation of nonrenewable fuels, stronger energy security through energy independence, and an improved trade balance. Authorization should be restored to allow the use of BPA borrowing authority to begin the Third Intertie now.

Army Corps of Engineers

The subcommittee is aware that the U.S. Army Corps of Engineers has initiated changes in the operation of multipurpose federal water projects on behalf of some project beneficiaries without the knowledge or participation of other beneficiaries. Some proposed modifications conflicted with the congressional authorization for the project, and would alter the scheduled repayment of project costs if implemented.

Most federal agencies are subject to procedural provisions imposed by statute when making large modifications to federal water project operations. The Corps does have regulations that attempt to provide for public participation, but the Corps' own compliance with these regulations has been sporadic. Thus, without a clear legislative directive, affected parties may not be given an opportunity to participate when the Corps considers operational modifications.

APPA is now working with the appropriate authorizing committees to craft a legislative solution to this due process dilemma. Notice and comment requirements for major operational decisions can be designed both to promote public participation in Corps decisions affecting project participants and the public, and to preserve the Corps' latitude in day-to-day decisions. This due process requirement should diminish the need for eleventh hour appeals to Congress by adversely affected parties, and APPA looks for the support of the members of this subcommittee in this legislative effort.

Bureau of Reclamation Operation, Maintenance, and Rehabilitation (OM&R) Revolving Fund

Among the initiatives contained in the Department of the Interior's Assessment '87...A New Direction for the Bureau of Reclamation report is a proposal to transfer operation and maintenance (O&M) responsibilities at multipurpose federal reclamation projects to nonfederal entities, i.e., water users' groups. Although APPA shares the Bureau's commitment to increased efficiency in the operation of reclamation projects, we believe that operation and maintenance of multipurpose projects must remain a federal responsibility to ensure that competing interests of water and power users are balanced. If the Bureau determines that it no longer wishes to operate and maintain the projects, APPA supports the transfer of O&M responsibilities for power features to the appropriate power marketing administration.

The Bureau has informed APPA that it does not now intend to initiate such transfers and that, if it decides in the future to reactivate the proposal, power customers will be given an opportunity to participate in the discussion.

In lieu of transferring O&M responsibilities to nonfederal entities, the Bureau is now proposing legislation to establish a revolving fund for operation, maintenance, and rehabilitation (OM&R) of reclamation projects. The proposed bill would authorize the Secretary of the Interior to use revenues generated by project operations for future OM&R expenditures, without requiring annual appropriation of such sums. OM&R expenditures for water and power features would be reimbursed in the year of expenditure by water and power users. OM&R costs allocated to nonreimbursable functions -- estimated by the Bureau to account for only 18 percent of total OM&R program costs -- would be paid from the fund, but treated as an offset against the annual transfer of funds in excess of operating needs from the Basin Fund to the General Fund.

According to the Bureau, the annual appropriations process has not provided sufficient funds in recent years to ensure timely, cost-effective OM&R at reclamation projects. Budgeting pressures have reduced operation, maintenance, and rehabilitation programs to the point that needed work is being delayed, and a backlog has been created. A revolving fund that enables OM&R work to be scheduled based on technical determinations, rather than on the availability of appropriated funds, would ensure the operational integrity of the projects and protect against loss of revenues due to delayed maintenance or breakdowns.

APPA supports this concept, and notes that revolving funds or similar mechanisms for operation, maintenance, and rehabilitation are already used effectively and satisfactorily for the Colorado River Storage Project, the Colorado River Basin Project, the Boulder Canyon Project, the Fort Peck Project, and the Bonneville Power Administration. Reserving the right to comment on specific legislation when such legislation is formally requested by the Bureau or otherwise introduced, APPA endorses the concept of the OM&R revolving fund legislation and asks that the subcommittee give such legislation careful consideration.

DOI Fiscal Year 1989 Hetch Hetchy Budget Request

The Department of the Interior FY 1989 budget requests $600,000 to continue a study of restoration of the Hetch Hetchy Valley in Yosemite National Park to its natural state by draining the Hetch Hetchy Reservoir and dismantling the O'Shaughnessy Dam. Destruction of the dam, which is operated by San Francisco and provides power and water for San Francisco, Modesto and Turlock Irrigation Districts, and other Bay area entities, would reduce California's power resources, increase ratepayer costs, and sacrifice a clean, economical, renewable resource with much useful life remaining.

DOI has estimated that closing Hetch Hetchy means the loss of at least 150 MW of capacity and 900 million kilowatthours of energy annually. The Department of Energy's estimates find that the loss of this hydropower will translate into extra fuel costs of $34 million a year for oil and gas. Adding 150 MW of replacement capacity costs, DOE found that the total annual costs of the DOI concept would be at least $80 million initially and $109 million over the plant's remaining life.

APPA believes the Hetch Hetchy concept is irrational from a consumer and energy policy standpoint and considers further study unwarranted and unjustified.

Clean Coal Technology Rate Incentives

Although clean coal technologies are not included within the jurisdiction of the Energy and Water Subcommittee, the subcommittee does appropriate funds for the Federal Energy Regulatory Commission, and the Department of Energy has recently announced it will propose a controversial rulemaking by FERC on rate incentives for clean coal technologies.

APPA has strongly supported clean coal technologies, and last year wrote the Appropriations Committee requesting a funding level of $850 million for clean coal technology grants for Fiscal Year 1988 and 1989. We continue to believe that the clean coal technology grant program initiative offers a promising means to demonstrate a full range of technologies appropriate to the retrofit, repowering and new source markets.

APPA has been troubled, however, by persistent efforts to incorporate generous rate incentives into the program. For example, Department of Energy officials have announced a rulemaking that will be proposed by FERC that will provide lucrative incentives for investor-owned utilities which construct qualifying clean coal projects, including full construction work in progress, an incentive rate of return, and an accelerated amortization schedule.

APPA opposes the suggested rate incentives as unnecessary and unwise, anticompetitive and anticonsumer. In contrast to federal cost-sharing for clean coal demonstration projects, which is made available to all segments of the utility industry, the proposed rate incentives are discriminatory. First, the incentives have no value to nonprofit utilities, providing an effective incentive only to investor-owned utilities. Second, the FERC incentives are available only at the wholesale level, potentially placing municipal and cooperative electric systems which purchase wholesale power from investor-owned utilities receiving the FERC rate incentives at a severe competitive disadvantage.

APPA questions the appropriateness of these rate incentives. FERC has authority now, under the Federal Power Act, to grant advance approval for cost of service or rate base treatment of high risk RD&D expenditures (18 CFR 35.22). Such expenditures could certainly include clean coal technology projects. Unlike the proposed rules, however, FERC's existing procedures contain stringent scientific, economic, environmental, and consumer safeguards, and provide for normal recovery and return on investment -- a fully sufficient incentive.

The rate incentives proposed by FERC also create a strong bias in favor of coal and against competing fuels and technologies. When Congress passed the repeal of provisions of the Fuel Use Act, it was stated that the choice of a utility boiler fuel should be a market decision. Is it necessary or appropriate to now manipulate fuel choice?

As stated above, APPA supports full funding for the clean coal technology initiative, but requests that the Appropriations Committee, in cooperation with the authorizing committees, ensure that FERC and the Department of Energy refrain from any further efforts to impose unwarranted rate incentives on electric utility consumers.

Statement of the American Chemical Society

The American Chemical Society appreciates this opportunity to present its views on The Department of Energy's FY 1989 budget request and to offer some specific comments on support for research in the Office of Basic Energy Sciences (BES).

The United States is the recognized world leader in many energy and chemical technologies; but this leadership is being challenged. Long-term basic research activities supported by the BES program are essential to continue the Nation's leadership in these areas. The knowledge base for new technologies and future energy options springs from BES-supported research, thus helping to ensure that the U.S. maintains its energy and economic security and meets the challenge of increased international competition in science and technology.

Not only does the operating budget of BES fund long-term basic research, it also supports high-quality national research facilities heavily used by researchers in industry, government, and academe. These user facilities provide valuable opportunities for technology transfer and for the training of scientists and engineers. In fact, over 3,400 researchers from industry, government, and academe used these DOE research facilities last year.

The Society notes the proposed increases in FY 1989 for the operating expenses of the Chemical Sciences, Materials Sciences, Energy Biosciences, and Engineering and Geosciences programs within BES. However, a look at the historical budgets indicates that growth in these areas has been too low. This fact was highlighted in the conclusions of the Basic Energy Sciences Advisory Committee's December 1987 report, which stated that "....the funding of BES has not expanded enough to deal adequately with the needs, and certainly not the opportunities, facing the Nation and the DOE."

Budget Recommendations

One of the primary missions of the Department of Energy is to assure future access to abundant and clean sources of energy. Over 90 percent of the Nation's energy is based on chemistry. Given (1) the importance of chemically-related basic research to the DOE mission, (2) the need to have a secure energy-based economy, and (3) the trends in funding for the Basic Energy Sciences program, the American Chemical Society recommends:

- A 20 percent increase over FY 1988 be allocated to the operating budget of the Chemical Sciences Division, from $88.2 to $105.8 million.
- A 15 percent increase over FY 1988 be allocated to the operating budget of the Materials Sciences Division, from $126.0 to $144.9 million.
- A 15 percent increase over FY 1988 be allocated to the operating budget of the Energy Biosciences Division, from $20.3 to $23.3 million.
- A 20 percent increase over FY 1988 be allocated to the operating budget of the Engineering and Geosciences Division, from $31.4 to $37.7 million.

The Society recognizes the urgency of budget constraints. However, in the context of the promising research directions available, the budget growth being proposed is modest when compared to the potential benefits to the Nation's economic future.

Research Directions

Exciting areas of research now exist with definite promise for payoffs to the U.S. economy and the energy picture, and should be pursued. Opportunities in the chemical sciences and engineering have been identified as key to America's energy future, in briefings and reports of the National Research Council; the Committee on Science, Engineering, and Public Policy (COSEPUP); and various government advisory groups.

The soon-to-be published National Research Council Report, "Frontiers in Chemical Engineering: Research Needs and Opportunities," identifies promising research thrusts in the areas of In-Situ Processing of Energy and Mineral Resources, Liquid Fuels for the Future, Advanced Computational Methods and Process Control, Surface and Interfacial Engineering, Microstructured Materials, and Biotechnology and Biomedicine. These areas have research and budget implications for the DOE Office of Basic Energy Sciences, particularly its Divisions of Chemical Sciences, Materials Sciences, and Engineering and Geosciences, as well as elsewhere in the Department.

Similarly, the 1985 National Research Council Report, Opportunities in Chemistry, showed that reaction dynamics, catalysis, combustion, corrosion, and plant sciences are essential to DOE's energy mission. The Department still has not responded adequately to the recommendations in this Report with new thrusts and new monies. These research areas relate directly to the chemical research supported in the Divisions of Chemical Sciences, Materials Sciences, and Energy Biosciences.

The Department of Commerce, in a recent review of emerging technologies and their impact on the economy (The Status of Emerging Technologies: An Economic/ Technological Assessment to the Year 2000, June 1987), has concluded that, in order to remain competitive internationally, American industry by the turn of the century must master such key materials areas as superconductors, polymer composites, optical electronics, and advanced microelectronics. Materials science is at the heart of nearly all technologies that pace economic productivity, from industrial technologies to biomedical science to electronics to transportation to energy conversion. Chemists and chemical engineers must be given adequate budget support to play a key role if the U.S. is to meet this national agenda.

High-temperature superconducting materials--substances that lose all resistance to electricity below a certain critical temperature--could yield technological leaps in telecommunication, electronics, power generation and transmission, aerospace, and medical technology. The recent Report of the Research Briefing Panel on High-Temperature Superconductivity, COSEPUP, 1987, characterizes international competition in this field as intense, but indicates that the U.S. competitive position is good. The report concludes, however, that "Japan offers perhaps the strongest long-range competitive threat to the U.S. position." In view of this intense global competition, ACS believes that it is critical that research in high-temperature superconductivity be placed in an environment which will ensure long-term sustained funding. Here again, chemists and chemical engineers can play key roles in advancing an understanding of the properties of high-temperature superconducting materials, in the search for additional stable superconducting materials, and in devising chemical processes and methods for their wide application. An infusion of additional funding is urgently needed to continue the momentum of ongoing research. DOE's Basic Energy Sciences Advisory Committee has recommended that $30 million be added to the BES FY 1989 budget request for such research to be conducted in the Materials Sciences, Chemical Sciences, and Engineering and Geosciences programs.

Although the Society recognizes that there are high-temperature superconductivity initiatives in the budget request, it is not entirely clear from the budget documents that the research will be funded with new FY 1989 dollars. Therefore, it appears to us that the requested increases to BES programs are inadequate to pursue these and the other promising areas of research outlined above.

Benefits of Research

Research funded by the Chemical Sciences Division continues to contribute to fundamental knowledge about energy-related processes and developments--knowledge that has benefitted the Nation and has resulted in patents and commercialization.

An example of such success is the work of E. S. Yeung, Professor of Chemistry at Iowa State University and Senior Chemist in the Ames Laboratory, who has developed a new measurement technique. Dr. Yeung, 1987 recipient of the ACS's Award in Chemical Instrumentation, has combined the powerful laser with other scientific

techniques to solve real life problems in energy generation, medicine, the pharmaceutical industry, and semiconductor fabrication. His patented micropolarimeter can record levels of optical activity much lower than those of previous measurements. He has applied this new methodology to determine optical activity in shale oil, coal, and coal extracts. The extent and nature of the optical activity, a measure of the right-handed or left-handed configuration of certain molecules, gives information about the age of the fossil materials and their geological origin.

Another application of this technique with far reaching consequences is its use in determining the level of blood cholesterol. High cholesterol has been correlated with atherosclerosis and heart disease. Current measurement techniques determine a single figure, while two forms of cholesterol, free and bound, are known to exist. The culprit in heart disease is thought to be the bound form. Yeung's new technique distinguishes between the two forms and measures each, as well as the total. The method is so sensitive that it improves on available commercial techniques by a factor of a thousand.

DOE-BES funded researchers also are attempting to make more of our energy resources economically usable. Natural gas, predominantly methane, is often found contaminated with nitrogen. It then has poor heating value and is less economically efficient to use. Chemical engineers at the University of Texas at Austin have prepared a new series of membranes which preferentially pass nitrogen rather than methane. This new process removes the undesired nitrogen, thus increasing the heating value of the remaining natural gas. The research looks promising and is being expanded to search for even more effective membrane materials.

Academic Research Support

The Society commends the Department of Energy for maintaining a strong component of its research at universities since they play a vital role in the research process. Currently, 34 percent of the BES research funds go to universities. The larger part of the total BES operating budget supports major facilities and research at national laboratories. Although the major facilities are heavily used by academic and industrial scientists and engineers, the balance among DOE research performers should be reviewed from time to time so as to determine the best mix to serve the Nation's interests.

The ACS believes that the University Instrumentation Program under the Office of Energy Research (OER) is underfunded. This subprogram was established to alleviate the pressing need among DOE researchers for state-of-the-art instrumentation costing over $100,000 each, and to allow graduate students to be trained with sophisticated research equipment. It also enables university researchers to employ "innovative" instrumentation on energy problems. This program was only able to support thirty awards in FY 1986. Strong proposal pressure coupled with flat funding over the past three years will allow this program to make only eighteen to twenty awards in FY 1989. In order to relieve this backlog of instrument needs in the academic community, the ACS recommends that Congress increase the University Instrumentation Program in FY 1989 by 50 percent to $7.5 million.

OER also reaches out through its University Research Support Program to provide research and educational opportunities at National Laboratories for university faculty, graduates and undergraduates, as well as high school science students and teachers. The Society supports the proposed increases for the semester-length research appointments at five science education centers located at DOE multiprogram laboratories. The ACS also supports the increases in the budget for educational opportunities for undergraduate science and engineering students, for elementary and secondary science students, and for high school teacher research programs. Our national well-being rests on a strong science and engineering work force. The ACS is pleased to see that DOE is playing a role in enhancing the quality and increasing the number of young people interested in pursuing energy related scientific and technical professional careers.

The ACS hopes these recommendations will assist your Subcommittee in its deliberations on the DOE budget for FY 1989. The costs of the recommendations outlined are modest compared to the benefits to DOE's energy mission and to the economy as a whole.

STATEMENT OF THE HAWAIIAN ELECTRIC CO.

This written statement is submitted on behalf of Hawaiian Electric Company (HECO) in support of continued appropriations for the Department of Energy (DOE) to permit completion of the Hawaii Deep Water Cable (HDWC) program.

The HDWC program was established to develop high technology submarine power cables that will extend cable designs and applications beyond the current state of the art. The program is funded jointly by the Federal government and the State of Hawaii. HECO is the prime contractor for the HDWC program; Pirelli Cable Corporation and Hawaiian Dredging and Construction Company are the principal subcontractors.

As stated in the contract between DOE and HECO, the primary objective of the HDWC program is:

> To determine the technical feasibility of deploying and operating a submarine power transmission cable between Kohala on the Island of Hawaii and the Makapuu area of Oahu over a service life of at least 30 years.

This objective, if achieved, will represent a significant engineering feat. To date, high voltage power cables have been laid in water depths no greater than 1,800 feet. The cable being developed in the HDWC program will have to be laid in depths of over 6,300 ft. Further, the selected route for deploying this submarine cable necessitates that a cable laying system be designed to successfully deploy the cable in seas which typically experience high waves as well as strong winds and ocean currents. The combination of extreme depths (almost four times deeper than any existing system), high waves (three times greater than considered operational by present practice), strong currents and steep bottom slopes make this project substantially more difficult than any other submarine power cable project ever attempted.

Demonstrating the technical feasibility of laying and operating a power cable under the above-stated constraints will represent a significant step toward advancing the state of the art of submarine power cable design and installation.

The HDWC program includes two major components:

1. development and design verification of a reference cable; and

2. determination of the technical feasibility of laying this cable on the ocean bottom along a predetermined route with the required accuracy and proper residual tension.

The Hawaii Deep Water Cable Program was authorized originally under the Omnibus Budget Reconciliation Act of

1981. To date, a total of $17.8 million has been appropriated for the program, including $4.77 million in Fiscal Year 1988 Energy and Water appropriations. The FY 1988 funds are to be used, together with funds now being requested for FY 1989, to conduct at-sea testing of a surrogate cable.

Laboratory testing of the referenced electrical cable is presently underway and will be completed by November 1988. This $2.64 million laboratory testing program will simulate mechanical and electrical stresses anticipated for the commercial cable during actual deployment at-sea and at least thirty years of subsequent operation. Test results to date indicate that the cable meets or exceeds design requirements.

The final phase of the program is at-sea testing. This test program is designed to prove the technical feasibility of installing the cable with the accuracy and residual tension required for successful operation over a minimum thirty-year service life. Major tasks in this phase of work include the fabrication of approximately 33,000 feet of cable, leasing and outfitting of a cable-laying vessel, and the preparation for, and execution of, the actual at-sea test where we will learn how people and machines work together in the actual at-sea environment. The design of this at-sea test program is nearing completion.

Consistent with our schedule given to Congress last year, the program is targeted for completion by May of 1990. Funds required to complete the work, by major tasks, are as follows:

HDWC FY FUNDING REQUIREMENTS
(X $1,000)

	FY 1988	FY 1989
Operations planning	250	
Engineering	250	
Lab test modifications	250	
Control equipment procurement	100	
Vessel lease and modification	2,580	
Cable fabrication	450	160
Cable transport		70
At-sea testing		2,616
Test report		125
Vessel re-modification		1,240
Cable off-load/storage		105
DOE technical support	200	280
HECO technical support	190	60
Program administration	500	820
Surrogate cable test		100
	$ 4,770	$ 5,576

The investment in the HDWC program has already produced important technology transfer opportunities and other national benefits. For example, Nova Scotia Power Company will be supplying power to Boston Edison via submarine cable; HDWC documents have been provided to the project consultants. Middle South Utilities will be supplying power to Florida Power & Light via submarine transmission from Grand Bahamas Island; HDWC information has been given to EBASCO, the engineers and contractors for design. Also, the National Power Company of Iceland has issued a second, detailed study of transmission to Scotland that specifically references information from HDWC and affirms the feasibility of such transmission.

A commercial cable/geothermal venture in Hawaii is moving toward reality. Hawaiian Electric Company has stated publicly that it can accept a 500 megawatt block of cable-transmitted power and has offered to initiate negotiations for power purchase following successful completion of cable research. In February 1988, an economic study concluded that such a venture is feasible. An advisory group of leading businessmen in Hawaii, appointed by the Governor, has examined all facets of commercial cable/geothermal and has endorsed it as a sound business enterprise.

Hawaiian Electric Company urges the members of this Subcommittee to support the appropriation of funding to conduct the at-sea testing phase and complete the HDWC program. Continued Federal commitment to this program is a national investment in our technology future and would continue to produce important benefits.

STATEMENT OF THE ENERGY AEROSPACE INDUSTRIES, INC.

[NOTE: A number of attachments to this statement had to be deleted because of their inferior quality, rendering them unsuitable for printing.]

LETTER FROM GERALD J. ORLOWSKI AND ASSOCIATE

September 30, 1987

Professor Paul Boynton
University of Washington
Seattle, Washington

Dear Professor Boynton:

In the Saturday edition of the Arizona Republic, September 26, 1987, there appeared an article in which you were quoted in part as saying that evidence has been found backing theories about the existence of a fifth fundamental force governing the working of the universe. The following assessment of these fundamental forces might give science a new understanding on this subject.

There are some theories that have become mental boundaries but if these boundaries would be opened and expanded they would then serve in a way that is conducive to achieving knowledge and in turn advancement in the scientific community which would benefit all of mankind. The theory of five separate forces as outlined in your article is just too restrictive and needs to be seriously reviewed. Theories are only as valid as is their application. Holding to theories that are no longer constructive is merely asking for more ozone holes and that spells danger. The subject hasn't changed, just hold on for a moment.

Let's take a look at the strong force, which science calls the most powerful force because it binds particles together. It is so identified because scientists have not yet learned how the particles unlock themselves. When a new understanding of particle transmutation becomes a reality, science will then call this a weak force, which is inaccurate. Science has made the error of equating the force it takes to break apart structures with the weakness or strength of that particular structure but when nature works with nature there is no struggle. If scientists would learn to offer particles the proper magnetic field they would see this principle at work. Magnetism and the proper use of it is the property that unlocks the molecular lock. The reason a particle does not come apart is because it has no magnetic field to go into. Scientists today use an electromagnetic field and that is the hold. By flowing them through a magnetic field, they would find that they come apart.

In calling gravity the feeblest force because it only holds planets in their orbits you have misjudged gravity. In an article as far back as 1911 in "Nature", March 23rd, C. Brush said that to replace the attract hold of the earth to the moon would require, as an example, a steel cable 500 miles in diameter, yet have no weight of its own. (See Article, March 23, 1911, Brush.) Weak Force??

The force we identify as an electromagnetic force is very limiting because the name ties electricity to magnetism and locks it into your mind. Evidence has been presented over and over that magnetic flowing current can be put to good use and it does not manifest any electrical properties. (See Felix Ehrenhaft article.) A mental separation therefore needs to be made between electron flow and magnetic flow.

We see therefore that staying with this position makes it difficult to advance into the future simply by trying to modify these present force theories. Modification is not the answer. Mental restructuring is the key to open the door.

For consideration, let us identify a new force theory that allows for the needed expansion to carry mankind into the upcoming golden age of civilization. Let us group in a positive way all the forces of the universe into three basic ones: light particles, magnetism and molecular structures called electrons. From this premise we can allow the activity of each to work as they <u>are</u> - not as we have insisted they are.

Although it is understood what you are trying to achieve the very fact that there is need to create a fifth force tells us we have not been viewing structures accurately. Forces don't hide themselves. The issue herein is not that gravity can be counteracted but that gravity can be seen as it really is, which is compressed magnetism. From this qualification (and you can stop your laughing here), you can then gain the perspective needed to go forward. What you call your fifth force is a re-arrangement of <u>your</u> molecular structure system within the earth's framework. Taken step by step I will show you the simplicity that has been overlooked - avoided and discounted because of a limited idea of how the universe is constructed. Man does <u>not</u> know all but if he so chooses he may stand on the threshhold of a new era that will save his planet. You are seeking to break things into forces but it is all <u>one</u> force working together in <u>each</u> structure, the same force - not a differing one. Take away magnetism and the universal system has no glue. By viewing magnetism as you do you have eliminated the working of this force outside of your planet. It is not that there is no gravity (magnetism) it is that it works on a differing principle.

Because you have decided there is only mankind on planet Earth you also have decided that everything everywhere works according to your theories and dictates, but the Ozone hole leaves you with a question and that question is - where did we go wrong? It will suffice to say that spray cans and chemicals are not the scape-goat, no matter how you try.

When you come to an understanding that your world and its survival is based on re-structuring your thoughts then you will be ready to investigate the field of magnetic energy and magnetic flow and how it relates to your earth and space travel, your earth and the Ozone hole - your earth and the whole of the planetary system. Nature seeks to offer you a positive energy that will do for your planet what you are now seeking to do through the acknowledgment of your carelessness. It will be of great benefit if you will begin to understand that you can no longer move against nature but must now utilize what is offered for the benefit of the world. You have long overlooked, through greed, the use of magnetic free energy, and the time is now at hand because your planet is soon to find itself extinct if you do not.

By now you are either understanding or foolishly chalking it up, but either way, my part is done.

Keep searching because the Creator Force of all that is desires to give mankind the answers as to how his world functions.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski and Associate

1927

ATTACHMENT

there was a definite arousal of visual sensation by the alternating field; the effect appeared more like an alternate intensification and inhibition of whatever sensory process was already in progress. That is to say, the idio-retinal light which is present before the current is turned on is increased and decreased alternately.

A KINETIC THEORY OF GRAVITATION.[1]

EVER since Sir Isaac Newton enunciated the law of universal gravitation, more than two hundred years ago, philosophers have speculated on the nature of that mysterious agency which links every atom of matter in the universe with every other atom. Newton found himself unable to offer any adequate explanation.

Since Newton's time several theories of gravitation have been proposed; but all, of which I am aware, are open to strong objections, and are not considered even promising by physicists.

Study of the nature of gravitation is beset with unusual difficulties, because gravitation is ever with us and about us; it is the one universal phenomenon, and we cannot escape from its influence—cannot obtain any outside point of view.

Gravitation is often described as a feeble force; and so it is, from one point of view. It is difficult to measure, or even to detect, attraction between two small bodies. But when the bodies are of planetary size the aggregate attraction of their molecules is enormous. It is easy to calculate that the attraction between the earth and the moon, which is just sufficient to retain the latter in its orbit, would, if replaced by a steel cable, require that the cable be about five hundred miles in diameter in order to withstand the strain. Between the earth and sun, the cable would have to be nearly as large in diameter as the earth; and attraction between the components of some double stars is millions of times greater than between the earth and sun (Lodge). So tremendous a phenomenon as gravitation, a phenomenon compared with which all others seem trivial, must have a mighty origin.

That gravitation is a phenomenon of the all-pervading æther is beyond reasonable doubt. This is so generally conceded that it need not be argued. But how does the gravitative influence originate? How is it transmitted and maintained? What is the *mechanism* of gravitation? It is the purpose of this paper to attempt an answer to these questions.

Let us consider what happens to a falling body. We know that it gathers kinetic energy from some source, as evidenced by its acceleration; that this energy may do external work or develop heat; that the amount of energy gathered is measured directly by the distance fallen through (within the limits of uniform gravitation), irrespective of the time or rate of falling. When the distance fallen through is of inter-planetary magnitude, and the attracting body large, the gathered energy is enormous, sufficient, if converted into heat, to vapourise the most refractory falling body.

We are here confronted with the question, Whence comes the energy acquired by a falling body? Certainly it was not inherent in the body before the fall, as evidenced by the fact that during unimpeded fall none of the physical or chemical attributes of the body, aside from the acquired motion, changes in the slightest degree.

We have been taught that before the fall the body was endowed with "potential energy of position," which is converted into kinetic energy during the fall. I think "energy of position" is an unfortunate term, because it is so very inadequate. To me it explains nothing. The case is not like that of a flexed spring, where there is internal molecular strain or displacement.

Let us imagine a pound-weight of iron, for instance, raised from the surface of the earth to a point near the moon in a line joining the centres of the two bodies, the point so chosen that the opposing attraction of the earth and the moon shall exactly balance each other, leaving orbital motion out of consideration.

On the surface of the earth the pound-weight had some so-called "potential energy of position," because it was capable of falling into a pit; but in its new position near the moon, this potential energy not only has not been augmented, but has disappeared entirely; the pound-weight, left free to move, remains stationary; and yet we must have expended more than twenty million foot-pounds of energy in overcoming the attraction of the earth and lifting the weight to its new position. This amount of energy would be sufficient to impart to the weight a velocity more than ten times greater than that of the swiftest cannon-ball, or, if converted into heat, would be many times more than sufficient to raise the iron weight to dazzling incandescence and then vapourise it. Now, in lifting the weight, this large amount of energy has disappeared utterly. We cannot believe that the whole or any part of it has been annihilated; it must, in some form, be resident somewhere. I think no one will contend that this energy is resident, in any form, in the cold, motionless pound-weight. I believe it was absorbed by, and is now resident in, the æther through which the weight was raised. Conversely, if this be true, a falling body must acquire its energy from the æther through which it falls. This is a fundamental idea to which I invite attention. Faraday glimpsed it long ago, and others have appreciated it more clearly since his time. But, so far as I am aware, no one has realised its significance.

This view of gravitation implies that the æther is endowed with very great intrinsic energy in some form. Many men of science now hold that the æther is so endowed, and that the amount of this intrinsic energy is enormous. Sir Oliver Lodge ("The Ether of Space") appears to regard this energy as potential in form, and estimates the intrinsic energy of a single cubic millimetre of the æther to be almost inconceivably vast. He says, "All potential energy exists in the ether." Sir J. J. Thomson says, "All kinetic energy is kinetic energy of the ether."

I conceive the æthereal energy involved in gravitation to be kinetic rather than potential, the latter involving strain or stress. Newton, and later Maxwell, assumed that bodies produce a stress in the æther about them of such nature as to account for gravitation, but they were unable to imagine any physical cause for the stress.

All the past theories of gravitation of which I am aware, except the corpuscular theory of La Sage, appear to regard gravitating matter as the seat of the gravitative influence, the surrounding æther, by induced stress or otherwise, acting simply as the medium of transmission. I cannot see that any of these theories accounts for the energy acquired by a falling body.

My own view of gravitation differs from these radically. I believe that kinetic energy of the æther is the fundamental cause of gravitation, and that a gravitating body plays a secondary *rôle* only in disturbing the normally uniform distribution of the æther's energy, in a manner I shall endeavour to explain later.

Let us assume, then, that the æther is endowed with very great kinetic energy normally uniform in distribution.

Kinetic energy implies motion of something possessed of inertia. Now, inertia is a fundamental attribute of the æther. Sir J. J. Thomson holds that all inertia is inertia of the æther. The æther is highly elastic also, which, with its inertia, enables it to possess kinetic energy in wave form, as exemplified in radiation. By the term wave, I mean progressive motion locally periodic; doubtless the æther as a whole is stationary. Hence we may consider the kinetic energy of the æther as consisting in æther waves of some kind.

These waves, vast in aggregate energy, eternal in persistence, without finite source or destination, are imagined as being propagated in straight lines in every conceivable direction. This isotropic distribution of kinetic energy, essential to my theory of gravitation, was, for me, a difficult conception until I reflected that isotropic radiant energy is approximately realised in the interior of any furnace with uniformly heated walls.

Any kind of waves capable of exerting motive action on the atoms or molecules of matter will fulfil the requirements; but I shall first consider the transverse, electromagnetic waves of radiation, because these are the kind of æther waves we are familiar with.

Of course, intrinsic æther waves, if of the radiation kind, cannot be of any frequency at present known to us as radiation, because then all bodies would become heated.

[1] Paper read before the American Association for the Advancement of Science, December, 1910, by Mr. Charles F. Brush.

LETTER FROM GERALD J. ORLOWSKI

August 12, 1987

Professor David Larbalestier
University of Wisconsin
Madison, Wisconsin

Dear Professor Larbalestier:

At the beginning of August the Arizona Republic has a reprint of articles that were concerned with superconductors and a new material that has an ability to repel a magnetic field at higher temperatures.

You state "the evidence of superconductivity is the material's ability to repel a magnetic field." There is a difference between repelling a magnetic field and simply not receiving it. The fact of the matter is that the material already has within it a builtin magnetic structure and it is simply that it is non-compatible with the magnetic structures surrounding it.

This is where an understanding of a neutral magnetic energy comes in. The problem area is in the present limited teaching about magnetism. An analogy that is helpful in explaining just how many varying structures there are within the differing magnetic fields would be the color spectrum whereby we see basic colors combined to form new colors, and so it is with magnetism, as new magnetic structures form to create varying magnetic fields. For every magnetic structure that is known, there are others that have yet to be identified but are being produced by those that are known, off-shoots, if you will. There are however three basic differences between all magnetisms: a) the particular composition, b) their magnetic intensity, and c) what science has yet to understand -their pulse rate. If all or only one change takes place, the polarity is affected. An intertwining of magnetic circuitry produces the abiliity to monitor what is called a pulse rate.

Science must come to grips with the basic shortcomings in our teaching system. These teachings state that electrical current is the movement of electrons. But is this statement the best explanation? In electricity, a wire or superconductor is only a point of transference where an exchange takes place. A closer understanding of electricity which incorporates a molecular structure in the electron, would be to state that the conductor which has positive and negative particles simply form a molecular system of exchanges in such a manner as to create a new particle flow. The failure to explore the possibility of a molecular structure within the electron is the barrier that must be broken. Barriers begin in the mind and remain there until consciousness is ready to expand.

Before the qualifications for the superconductor can be stated perhaps the responsive activity needs to be reviewed. The activity spoken of is the material's ability to not only capture magnetic particles, but to maintain them in a neutral state. Where is this neutral magnetic field coming from that forms above and around the superconductor? All one needs to do is to assess their understanding of gravity in a different light. The mind of tomorrow must be freed of the thinking shackles of today. What if we were to view gravity as compressed magnetism.

(No - it isn't out of line, just flow with it for a minute.) View if you will compressed magnetic particles traveling downward at an almost infinite velocity they strike the supeconductor material, at which point they are flattened out and are changed into a wave form that now becomes neutral magnetic energy. This energy will become a flowing current only when it is given a place to manifest its new wave form. In this particular case it is the conductive material of the superconductor.

The premise for discussions concerning magnetism must take on a different and expanded understanding if mankind is going to succeed in helping himself. Because we are locked into words we are limiting ourselves. For instance, what if it were not the rhythmic vibrations of the atoms but an understanding that magnetism itself has a pulse. With this thought the magnetic pulse rate that is set up by this captured energy would then be the driving force which allows the particles to flow through a particle exchange process within the superconductor.

When current flows through a conductor, many things are happening. For instance, the atmospheric condition sets up a pattern for generating not only subatomic particles but nuclear masses as well. When you combine specific ions, in this case flowing magnetic current with certain gases, there is a combustion effect that takes place. Again, the conductor is only a point of transference. Perhaps Newton's law should read, "Possibly a change in substance is a change in molecular structure." After all it isn't written in stone. What of the possibility that a molecular structure maintains its own integrity and merely incorporates itself in a different structural formation.

As science opens to new knowledge, materials that welcome magnetism such as these superconductors are doing at the present, will become part of the space age travel which will learn to capture this neutral magnetic energy of space, and use hardware that will give it the needed polarities enabling the universe itself to supply our needs.

Leaving you with one last thought. I wonder how you would conduct an experiment that would open the door to showing that the superconductor is in fact somehow utilizing the surrounding magnetic energy from the atmosphere? It would be beneficial to prove if the superconductor has a draw factor that is perpetuating the phenomenon you are experiencing. To prove this, the work to be performed is to first find an isolation system in which to house the superconductor.

Your work is an exciting thrust forward that will hopefully open the needed doors.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski
5318 S. Hazelton
Tempe, AZ 85283
602-820-0069

LETTER FROM GERALD J. ORLOWSKI

January 30, 1988

Nancy Wertheimer & Ed Leeper
University of Colorado
Boulder, Colorado

Dear Ms. Wertheimer/Mr. Leeper:

In reference to an article in the Arizona Republic, January 10, 1988, you were quoted in part as stating that "Domestic power lines are taken for granted and generally assumed to be harmless. However, this assumption has never been adequately tested." The last sentence of that statement is indeed correct but more important is the why it has never been adequately or for that matter accurately tested. As long as the workings of electricity is seen to be standing on its own power then the door is closed to further understanding. Electrical energy when viewed as co-existing with magnetic energy will then allow new discoveries in order to help resolve the upcoming dilemmas that will be "fact" if things are not soon reviewed from a different perspective.

The first thing needed to be looked at is what we call a magnetic flow that is assumed to be a by-product of flowing electrical energy. Nothing could be further from the truth. What needs to be studied is the simplistic workings of the magnetic field which indeed is the "glue" that holds it altogether. Science has long ignored magnetic energy and its potential because it has refused to accept that it is not simply close-ended energy. Very little work has even been done in the field of magnetic structural polarities. If one looks only for electrical responses on a meter - that's what he gets. Where is the device that measures varying magnetic energies? What has been assumed is that magnetism is singular in output. When we assume that the result of flowing electrical current can only produce a designated amount of magnetic waves then we immediately lose the value of magnetism as an on-going inter-related but free flowing energy of its own. Science refuses to open their minds and investigate the many reports of flowing mangetic current that have been published over these past years. By using the improper recording instruments the magnetic waves associated with power lines show a reading as being the same as magnetic waves from home appliances. Waves may indeed be waves but intensities are not and to say that one and one make two in this instance is not the case.

It is not that the magnetic energy from the electrical flow is destructive but that we are effected in our bodies by the oblivion we have to magnetic energy being a viable source of energy as we harnessed and utilized it. We have conceded that our bodies have magnetic properties so why can we not concede that the rampant electrical energies that are produced are not compatible with the natural magnetic flow within the human body. It is not the magnetic energy that is destructive because magnetism will flow in magnetism to a greater or lesser degree. Perhaps what needs to be looked at is the mis-directing of electrical current in order to obtain a desired effect and in so doing a natural balance is being destroyed. Always science has destroyed natural balances for expediency.

The subject we are discussing is magnetic waves. As strange as it sounds, to attain the proper frame of mind we must assess gravity in a different light. Gravity through error has come to

be known as a giant magnet in the earth that pulls everything to it. This is incomplete in thought. What is called gravity must be viewed as a compressed magnetism that acts as a catalyst for all other energy. We have become locked into the idea that magnetism somehow depletes itself, but if we would begin to view magnetism as a constant then we will be able to expand our thinking to not only utilize this magnificant untapped resource but to evaluate just how necessary it is in helping us to maintain life itself.

There is within each of us a certain magnetic energy that generates a draw factor to our atmosphere thus keeping us in balance. If something causes the atmosphere around us to become magnetically altered, then our bodies are not replenished as needed thus causing health problems.

Before we can address the subject of how electricity does this altering to the atmosphere we need to expand the now accepted theory of electricity and in so doing come to a greater knowledge of the energy fields in which we live. All energy is molecular structures. For instance in looking at the action of turning a generator we see it creates an atmospheric condition that causes molecular structures to group together and form into electrons. These magnetic particles which become grouped are the 'glue' holding our atmosphere together and they are drawn down from our ionosphere, the location science calls, 'a sea of invisible gases'. Removing this glue not only causes a depletion of our ozone layer, but when these particles are removed from our immediate living area they rob the body of the needed exchange of magnetic energy.

When electrons are formed, instead of assuming they simply flow through the conductor, in this case the power lines, there must be an understanding that these lines have positive and negative particles that simply form a molecular system of exchange in such a manner as to create a new particle flow. The wires therefore should be viewed simply as a point of transference. All along the power lines a transference happens as the high cycle energy sweeps in a pulse form away and then back to the power lines interchanging particles for the total distance along the lines. If a person lives close enough to the power line where the needed magnetic particles are extracted from the atmosphere then the replenishing process to the body is diluted and the first response the body has is a loss of energy. All energy is molecular structures. As with any depletion, the body has an initial resistance to this damage but this resistance eventually gives way and gradually the magnetic properties within the body are broken down through the absence of a compatible 'holding together' if you will. As magnetic properties continue to break down, the environment now becomes hostile and in turn a molecular change takes place, thus the body is forced to start a destructive process. This destruction manifests itself in the body's inability to retain healthy cells. Science can prove this by finding a way to examine the magnetic qualities within the body structure, primarily in the area of differences which would be evident in the magnetic structure within the blood. The Environmental Protection Agency in connection with the heath departments need to take an active role in getting blood samples from persons living in close proximity to power lines and check the magnetic qualities of these blood samples as opposed to those at varying distances away from the power lines.

The testing unit to properly evaluate the magnetic qualities within the blood must have a power system that can flow neutral magnetic energy. Yes, neutral. Part of the work of E.A.I. has

been to produce a unit which is available for multiple purposes concerning magnetic energy.

It would be our pleasure, if you so desire, to further this communication and to share ideas that might possibly lead to a blending and working together which will result in opening the door to the use of magnetic energy, which is a flow of energy in energy causing no problems to human life. The future of our world is at stake and certainly we would agree that depleting resources along with their mis-use will no longer sustain our world. Our world has a profound effect on the universe and it is time for us to recognize that certainly we are not alone.

If interested, our company is happy to send you a packet of information free of charge or obligation on our unit as has been sent to government agencies throughout the world.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI

August 7, 1987

Environmental Protection Agency
Washington D.C.

Attention: A. James Barnes, Deputy Administrator

Dear Sir:

In reading your news report of August 5, 1987, concerning lung cancer and radon gas, what you have neglected to inform the public about in this particular article is, "how did the decay of uranium come about"? By a logical thought process, one is led to ask this question. It is one thing to state that people are developing lung cancer from a gaseous substance but the statement holds no value unless you answer the question, "How did this killer come about?".

You state that it is an element formed in the radioactive decay of uranium, but what promoted this decay? Are you telling the public that when uranium left alone, untouched in the earth, that there is a natural process of decay that is killing us? Or are you not stating that it is man's tampering with these elements that has created and is continuing to create this destruction?

I suggest to you that it is the isolated element in uranium that we have taken and used for the destruction of mankind that is the culprit.

With the molecular breaking down that takes place with the misuse of radioactive materials also comes the responsibility to understand that you can not misuse what in itself is not harmful and not be aware that ultimately that misuse will produce a harmful effect somewhere, somehow.

When you half-heartedly inform the public you underestimate their intelligence and in so doing you show your own non-concern for mankind's welfare which in turn makes a hypocrisy of the Environment Protection Agency. To achieve the end result which your agency says it seeks, then the public needs to be informed accurately. Words have no meaning unless the understanding of those words is clear-cut.

Suggestive insinuations do nothing except create whatever thought someone wants another to think. You did a fine job of planting the message that radioactive decay of uranium and thorum is normal by saying it is present in rocks and soil. If you know that it is the misuse of radioactive materials that are causing this problem then say it and take a stand to have it stopped.

My hope for the future is not going to be limited by the negative and destructive problems that we impose upon our earth. I look forward to the time when new breakthroughs happen in the use of magnetic energy. Just because the world of science has not evolved mentally when it comes to the use of magnetic energy doesn't mean it is a dead end. We must stop viewing magnetic energy as something confined to a piece of metal. Using this energy, the door to our planet's future energy needs will be met without threatening the extinction of our planet. When reviewed, science will find that using magnetism is a natural flow of energy in energy creating no radioactive waste particles.

The arrogance of progressive thought has always been willing to sacrifice for the sake of expediency, "Just build more nuclear power plants." But now we have come face to face with the result, a new deadly gas.

The world of magnetic energy is not just an idea from a handful of wierdo's". It is as valid as the wierdo's of yesterday, the Wright Brothers, Alexander Graham Bell, Benjamin Franklin, etc.

When a man named Felix Ehrenhaft of Vienna showed flowing magnetic current it should have been further explored. When it happened with Nikola Tesla, Henry Moray, Rory Johnson, Gray, etc. (see list, it should have been explored. At that particular time we had not had the condition of vast nuclear power consumption with the enormous waste and other problems, and it was an ideal time to begin the exploration of other energy possibilities.

The ultimate goal of those who work in the field of sciences and protective government agencies must become one voice seeking the betterment of this planet. The one voice must become one mind and allow the love of our planet to overcome the ego trips of, "Who has done what". Scientists and environmentalists must divorce themselves from a political desire for power that is destructive in its quest and if they do not it will ultimately lead to the destruction of their own home.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI

January 6, 1988

Professor Petr Beckmann
UNIVERSITY OF COLORADO
Boulder, Colorado

Dear Professor Beckmann:

Referring to an article in the Arizona Republic, January 3, 1988, you were quoted in part as stating that "The nuclear-power industry has been hiding a big secret: Power from the atom is very much safer than any other source of electricity. This secret is safe with the anti-nuke movement which, by pandering to fears of modern technology, has nearly destroyed the nuclear-power industry". Let's examine some of what you call the anti-nuke fears.

In light of the continuing birth defects that affect generation after generation, in light of the thousands of women needing abortions because of Chernobyl, in light of the United States Three Mile Island disaster, to name only a few mistakes of deterioration, are you still willing to state that the anti-nuke activists are fear panderers?

Over and over again various nuclear power plants have covered up nuclear waste dumping and discharges of radioactive particles into the atmosphere. The prevailing attitude has been, "What the public does not know won't hurt them". This planting of destruction has finally resulted in a new and deadly harvest - in the form of RADON GAS - which has already contributed to killing thousands of people. Surely the nuclear power industry should have had enough foresight to understand that with the molecular breaking down that takes place with the misuse of radioactive materials also comes the responsibility to understand that you can not misuse what in itself is harmless and then be ignorant of the fact that ultimately that misuse will produce a harmful effect somewhere, somehow.

Perhaps it is the way and wisdom of the universal law that provides these anti-nukes - visionaries, as a balance in favor of continuing this earth life. We here at E.A.I. are alert to doing our part in focusing new light on this problem by sending out drawings and explanations on how building a power generating system that utilizes nuclear energy wisely (that is without radioactivity) will achieve what mankind has missed.

By using the proper formula, energy is supplied by particle transmutation whereby particles are harnessed properly within the disclosed system, that has been specifically designed. This system produces a speed-up of particle intensity which happens without the generating heat as we now know it. There is an acceleration of nuclear subatomic parts that creates a bombastic effect which creates a structure of mobility for other structures, forming a molecular breakdown from one structure to another. Within this system the process is contained and utilized thus producing a harnessed energy.

The nuclear energy released through this method of acceleration is therefore accomplished within the confines of a structural balance and this radical change of elements produces a captivity of power which is a constant flow of ions through the conductive use of neutrons and no radiation is manifest. It is the misuse of nuclear energy when radioactivity results and a unit such as proposed resolves this problem.

If you desire to publish information on this same energy system, please write and we will send you the packet on the unit free of charge.

The world can no longer afford errors through ignorance that continue to play havoc with the lives of its inhabitants.

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI AND ASSOCIATE

February 8, 1988

Dr. Carl Sagan
Astronomy and Space Sciences
CORNELL UNIVERISTY
Ithaca, NEW YORK

Dear Dr. Sagan:

In reference to an article in the Parade Magazine, Arizona Republic, February 7, 1988, you were quoted in part as asking this question. "What will it take to free us from the deadly trap that we have set for ourselves?" The first thing we need to look at is an honest appraisal of the total picture which will only then set the needed stage to answer your question.

Your assessment as to the condition of the planet Earth would be accurate if you included all of the factors which had an impact on mankind's arrival at this dangerous juncture. The avoidance of certain pertinent facts amounts to deception and deception is at its best when closest to the truth. The most severe trap mankind has is that of mental bondage which keeps us in a darkened state that we think is illumination.

It is important to go back in history and identify a most crucial point where man's knowledge took a wrong turn. It is from admission of this fact that we will make strides toward the correct road of advancement. A Popular Science magazine dated October 1925, states, "The Einstein theory of relativity soon may fall, and we may have to look for another explanation regarding the mysterious movements of the universe. Professor Einstein himself has just admitted it." Even so, scientists and physicists had already constructed new theories based on Einstein's teaching and so as a result error upon error cemented together to make a wall on continuing ignorance. These errors are now so woven into our teaching system that if a new and brilliant mind comes along there is little if any chance of combating the now limited theories. This wall of ignorance is now the foundation for the deadly trap that you speak about and here is why. The point of closest confrontation between American forces and Russian forces is the Persian Gulf as both seek to gain an energy advantage. Who is to blame for the fact that we even need this oil? Yes, it is sad to say but scientists of the past and present are primarily responsible for allowing this to happen. By all agreeing to institute a

conservation of energy theory, the accepted present teaching is that we never get more energy out than we put in. This teaching stems from a statement by Albert Einstein where he held to the view that the relative relationship of one particle to another did not matter. This would suggest that redistribution of particles was not possible. He was in error and time has proven this to be so. You see there has never been a problem of redistribution. The problem has always been with mankind's understanding of the manner in which the redistribution takes place. When a molecular structure breaks down there is a transfer of energy to the greatest part which is the attracting force.

Michael Faraday was not satisfied after his great invention of the dynamo because he did not want the expenditure of mechanical energy to turn his generator. In the book he wrote, his frustration was evident when after testing he stated, "There is a wheel in the physical mechanism of the action that is missing whereby electricity should be derived from magnetism without the need to spend mechanical energy."

He was searching for the free energy that has always been available through the use of the principle of attract, attract. Unfortunately the principle of attract-repel gained worldwide acceptance and quickly Faraday's dream was lost to the conservation of energy teaching. Attract-repel is now considered a sound principle when in fact it does not utilize the magnetic field to its greatest advantage.

The die had been cast and the suppliers of fossil fuels enjoyed the flow of cash they received and if any scientist had thoughts of exploring a way to eliminate the need for fuel to get electrical power, they quickly were silenced. This method of maintained vested control over the scientific community has not changed to this date.

To maintain this control over the long haul the program had to be expanded to all the school systems along with our present government's 'gagging program' that covers free energy as well as space related inventions.

Now this <u>control itself</u> is the deadly trap you speak about because it has become a two edged sword by preventing space visionaries of the lift principle from capturing compressed magnetism (gravity) and traveling to other galaxies. If Russia and America had the wherewithal to travel in space, both would quickly view the planet earth as a safe <u>home port</u> which had to be treasured and kept clear of nuclear contamination.

The price scientists paid by bending the knee to the oil companies was in their ignoring all of the evidence that proved magnetism is a constant. Properly used this knowledge <u>alone</u> would have opened the door for the planet earth to enjoy the golden age of civilization.

Is it too late? Are we already headed the way of the dinosaurs? No, it is not too late, but an understanding of what is next being stated must happen before meaningful changes would be allowed to take place. Mankind must stop selling himself short by perpetuating the teaching that we are all here by some <u>big bang accident</u>. This teaching is as destructive as the bomb itself. Why? Because it contributes to the idea, "easy come, easy go". Why help one another when this earth is all an accident anyway? To survive we must acknowledge the wisdom of the Creator Force who built this earth system with its interdependence that flows through a complete particle balance

system. To properly understand this earth system it is imperative that we first have the freedom of thought to begin a search of man's basic structural nature which is as follows!

Inside each of us we have a "God-mind", that part of us that is alive and never dies, that part that communicates what Creator God has to speak about, that 'knowing that I know', a perfect example being the information herein. That breath that He breathed into us. God is Spirit but He is also "total Mind" and "total Energy". Each human being is a part of His Mind and Energy seen in different yet similar forms and thoughts. So why does man find it necessary to kill each other? It is only when he takes that God-mind and utilizes it for his own lower natural ways that it is no longer pure. When we tamper and change and mold to our likeness and ways, we give over our God-mind and yield to our earthly flesh-self. We need to be more careful and realize that God is love but He is also Justice along with His Mercy. When we diminish another we diminish ourselves. God has no need to put another down to be someone. That is man's submission to evil of his own making.

The striving is to be "God-minded" and let God within lead. God is love and so the words "Thy kingdom come, They will be done" is man loving man, not with qualifications, just because he exists as God's creation. Yes, man must stop trying to defeat one another and man must learn to love and help and care for one another. This is God-thinking. Man must reach into the rarest part of himself and draw on that - his God consciousness that has not been touched by his flesh-self. The more man draws from this Source, the more he regains contact with what he searches for most - God.

This search then becomes the pathway that will allow our collective knowledge to usher in the golden age. What Golden Age? Magnetically computed automobiles - no pollution. Magnetically thrust airplanes - no pollution. The harnessing of magnetic energy to create heat - no pollution. Molecular structures understood in a new way.

The principle of attract-attract no longer discarded but opened for investigation with a mind not predisposed to a particular theory. Yes, it will be the beginning of a magnetic era, a flowing of energy in energy. We are at the dawning but still lingering in the dark, refusing to let go because we're not sure of where we're going. Man has never gone anywhere until he first let the past go.

The answer is so close it is blinding. All we need is for the leadership in charge to recognize and then allow magnetic energy to take its rightful place to ensure our future. Will we allow the Source of all truth to communicate the knowledge needed to save this Planet?

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski and Associates

LETTER FROM GERALD J. ORLOWSKI

December 16, 1986

Professor Murray Gell-Mann
452-48 California Institute of Technology
Pasadena, CA 91125

Dear Professor Gell-Mann:

It was a pleasure reading your article in the Arizona Republic telling about your new Institute. Of particular interest was your statement about movies running backwards, which was stated very well indeed. My wife, who holds the same interests in science as myself, after reading the statement was unaware that you had taken a giant swing at Einstein's theory of relativity. Undoubtedly it is wisdom for you to continue writing between the lines to prevent a head-on confrontation with the present "scientific facts" in order to enable you to have the Institute properly received and funded. After all, if Hollywood has invented time travel machines and "Back to the Future" movies, how can anyone come against American culture? How much more evidence will be necessary before we can remove the errors that have been woven into our school system. When will the truth win out against the accepted theory of relativity? "O, come on Murray, are you going to cause trouble?" We have millions of people, each year passing by the statute of Einstein in Washington, D.C., and his equation is boldly inscribed for all passers-by to see. What are you seeking to do, ruin our accepted errors? How will you answer when you are asked, "so what's the problem if he was a little off on the equation? We could just square something else, but leave our plaque alone. After all, he did bring us nuclear energy, didn't he?"

But they don't know it is not alright and that the misuse of nuclear energy is evident when radioactivity results. This radioactivity is causing enormous problems of waste disposal and disasters such as Chernobyl.

Please realize that after this occurrence, someone who had a complete list of parts, suppliers, drawings and possibly the patent applications could have with time and money, constructed and started up the motor faster than we could have done.

If the governments of the world have all decided to band together and prohibit new energy devices, fine. Then at least tell inventors that these items are off limits and simply be honest. But let's stop playing games. We inventors do not want

to become grab bags for the military so that they can take what they want and then quickly stamp their action top secret. Is this a strong accusation? Judge for yourself by reviewing this very recent development of October 11, 1985, which is enclosed. (See enclosed G.)

Trombly and Kahn are two of the brightest young physicists in America today. They invented a unit they called their 'N' machine, which is a free energy device that capitalizes on magnetic energy. Some of their ideas were acquired by reading old Nikola Tesla patents about liquid metal commutation. They filed for patents overseas and in the U.S. when their machine was running. The fact that this machine was running absolutely refutes the theory, "you can not get more out than what you put in." This is precisely what they did. The international patents issued because their newly invented unit was found to be unique and different.

Now isn't it an amazing coincidence that work was being done concurrently in the Pentagon D.O.D. on their own secret homopolar generator, which used the same basic theory. Now instead of the D.O.D. stepping forward and proving they in fact had the idea first, which is the customary third party challenge accepted worldwide, they sent gag orders stopping all activity by these two bright young physicists and, today this threat is still in force under the penalty of ten years imprisonment. No one could check into the Pentagon's actions now to see if they just didn't steal it, because it was stamped 'top secret'. The bottom line is just what will the Pentagon's D.O.D. do with their unit when it is finished? As we know, in any country the military's primary business is more concerned with war than peace. This may not sound American but that in fact is its function.

However, these two young physicists have only one desire and that is to cause this new technology to flourish worldwide to enable the planet Earth to clean up its atmosphere. To quote Trombly and Kahn within a hair, the attempted suppression of this work only points up the feeblemindedness of these men who lord it over the advancement of science in the U.S.A.

A notation should be made here about Nikola Tesla's work. These young physicists said they learned much by having Nikola Tesla's work available. Why can't we make it available to students today by putting it in our science books? Even though he completely disagrees with the present teaching on the conservation of energy, he proved free energy is available and, so in fact his disagreement is valid. Would we rather teach error than pursue truth?

Perhaps it would be fruitful if you assigned a work shop to find out how many inventors were sent gag orders titled Secrecy Order title 35 U.S. code 1952 Section 181-188. (See enclosed H.) One should make sure not to obtain the list from the government but only get their permission to advertise, allowing the inventors to come forward and show their actual documents, in other words, the ones received by inventors after they sent in patent disclosures to try to get a patent on their new energy efficient device.

I read a report where it states that the number of inventors who received these gag orders, telling them to shut up or go to prison for ten years, actually numbers in the thousands.

Enclosed are only some of the free energy inventions that I have saved over the past few years. They all have one factor in common. All of these inventors have been gagged one way or another, thus preserving the stand that the patent office now uses.

When will physicists and scientists step forward and answer the Patent and Trade Mark Office with authority when they say to an inventor, "It smacks of perpetual motion." That is not a negative point of view but a very defendable position for the inventor, because perpetual motion does in fact exist. You can say it doesn't. You can do away with evidence, but the fact of the matter is, like it or not, government or not, oil companies or not, etc. etc., we will some day be forced to use what they say doesn't exist.

A list of some perpetual motion units are enclosed. They include inventions by Joe Newman, Nikola Tesla, Karl Schaeffer, Harry E. Perrigo, Jack Scagnetti, William Long, etc. Oh well, some make it, some don't. That's the breaks. "Not on your life," is our response. If you had the opportunity to speak with some inventors, as I have, those who were financially drained by the system, you would find the hurt goes so deep that they can hardly speak about it let alone write to you as I am doing. They related to me and I felt the same, that the real hurt is not the loss of money, because our very nature is to be fighters and survivors, but the hurt is the way family and friends and society back off as if we acquired an untouchable disease. You learn to spot the friendly hello and the weak handshake with a quick goodbye while you know they are thinking, "how could this guy be so stupid as to pipe dream away on something that goes completely against the presently held scientific teachings?"

Why did the Congress pass this gag order in 1952? I seem to remember it was the fragile times of the Korean war and our government was greatly concerned with the possibility of inventors grouping together to make atomic weapons of sorts. They did not see ahead and realize that by giving the Patent Office the control to confiscate inventions, it also gave them the power to stop all free energy inventions by putting a label on them. In so doing, they created a monster. The result is that after 35 years of this gag order implementation, the Patent Office is now involved in the destruction ~~of a~~ safe environment which affects the whole world, not just the United States. The pollution circling our earth is caused in part by their inability to foresee the immense value of exploring the potential of free energy sources in units developed by people such as Rory Johnson, Trombly and Kahn, Henry Moray and the others mentioned previously.

Physicists too, are far from blameless. Where is the basic teaching put forth in our school system which allows the minds being educated to go beyond the dependency on electricity and explore the future in which electricity will be extinct for one reason or another? The reason that mankind does not develop to and utilize his full potential is that he is determined to stay with present concepts which have nothing to do with the future. And I repeat, in another way, to assume that electrical energy is now and always will be the only energy whereby man can be sustained is to limit the exploration of a greater potential to explore heretofore the untapped resource - magnetism. We cannot see the forest for the trees, so to speak.

Electricity is produced by converting mechanical energy to electrical energy and, this mechanical energy is supplied for the most part by air polluting fossil fuel burning generators. Magnetic flowing current, on the other hand, is free for the taking and is used 'as is' to do the necessary work. Dr. Felix Ehrenhaft's conclusions flatly contradicted the long established beliefs that electricity is the best way. Why haven't our learned physicists picked up on his teaching yet? Forty years is a long time to ignore a growth potential.

Another basic teaching is causing problems in our school system. Why is it that we spend more time in programming computers than teaching our children? When you put a wrong piece of knowledge into a computer, it can be x'ed out. Why can't man 'x' out wrong information in his mind? He can, but he won't. Error is comfortable but it is not profitable because the short haul eventually becomes a long one. Talk about sowing and reaping!! Believe me it's not just a biblical thought.

A comic joke was printed in one of our latest science yearbooks where it showed a young student who had written a very long equation on the blackboard and, near the end he boxed in a statement, 'then a miracle happened'. He then proceeded to give the answer to this very long equation. The elderly professor was pointing to his statement saying, "Can we be a little more specific here?" Being a joke in a science book is closer to the truth than we care to see. Science cannot just accept that there are things that happen that are outside of their limited knowledge and so they take this miracle for which they have no answer and they make an answer which in no way has to do with the actual happening.

Just picture a bright young man having an inquiring mind, who could be one of our future scientists, raising his hand in a classroom after a learned professor expounds on the now accepted "Big Bang" theory. He asks, "But Professor, Sir, where did the stuff come from that blew up?" Stunned for an answer, the professor responds, "Shut up and sit down, kid, you bother me." We owe that young lad an honest answer. With everything in the universe showing perfect harmony, why would a Creator-Force have to start with the ludicrous idea of blowing it up? Why, because of some radical creationists, should science be robbed of the freedom to state 'we don't know.' Why should they be fearful to state that there is a force that we cannot explain. Because as soon as we explain it, our explanation raises another question and then another answer is needed. Why does man insist he is All when is merely a part of it.

There is a statement in the writings of the Talmud that says, "God is the Place where the universe dwells." Think on that and everything else is minute.

Enough - before the positive is perceived to be a negative, let's talk about the future in a new way. It is my hope to contribute and in that way hold out some future hope for my grandchildren, that they might enter into and see the 'golden age of civilization'. But what does that mean? If mankind can dream and be free to make his dreams a reality without a stop gauge on them, there are unlimited possibilities. Perhaps sound, which can be a pollutant in itself, will once again be less threatening by the use of magnetic energy which unlike jet engines will have far less noise involved. There is an energy that is almost silent. Perhaps the sound barrier will no longer be so piercing a noise but a flowing of energy in energy, not a need to break through but simply to flow in.

Magnetic motors utilizing magnetic currents - nothing struggling to move but moving in what is yet an unfounded order. It is there, but man is just reaching it. There is an evolution of knowledge about to take place and the only thing that will stop it is man's unwillingness to be silent and learn, to tap into and listen to resources within himself and bring about a civilization that has been long ago forgotten because of his greed. We are not alone - unless we learn to work together, there is no hope.

Somewhere a long time ago, man had a dream tc bring about a better world and in that time the world was not even in the chaotic state it now is. Man had hopes and visions and dreams, and made them realities, but realities stop when man's dreams are tossed aside and stifled. Nothing that we have now has come about without a dream - without a vision. Man's injustice to man is that he has forgotten how to care, that there is someone beside himself. It is in our collective knowledge that our golden age will become our reality. What golden age? Magnetically computed automobiles - no pollution. Magnetically thrust airplanes - no pollution. The harnessing of magnetic eneregy to create heat - no pollution. Molecular structures understood in a new way.

The principle of attract-attract no longer discarded but opened for investigation with a mind not predisposed to a particular theory. It is the beginning of a magnetic era. We are at the dawning but still lingering in the dark, refusing to let go because we're not sure of where we're going. Man has never gone anywhere until he first let the past go. It is good what has been done but one good is not all there is.

It is my greatest hope that there will come a time when knowledge that has been given me will be shared for the good of all mankind. It is my hope that I live to see the day where my dreams become a reality by seeing mankind benefit from this knowledge in a practical way.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

Jo-An Doege

Jo-An Doege

By God's direction

ATTACHMENT

Highlights:
Page 1 - Paragraph 6
Page 2 - Paragraph 16 on.
Page 3 -Complete page.

FACT: Dr. Thomas Henry Moray of Salt Lake City invented a machine and invited a Federal employee (along with many others) to view it while it was running. This government employee smashed the device to pieces with an ax. The parts destroyed were too expensive for Mr. Moray to replace. When the government employee was asked why he did this, the excuse was that he had simply lost his head. Inventors are aware that the fact is that he only seemed to lose his head but knew exactly what he was doing.

QUESTION:

Should the government take the responsibility for their employee's criminal act and pay the damages so that John Moray (Henry's son) can rebuild the unit? Where is the law that protects the government from responsibility to pay for this kind of willful damage? Are we stating that the U.S. Government is totally immune even when in the wrong?

1945

LETTER FROM GERALD J. ORLOWSKI

March 5, 1987

Mr. John Moray
COSRAY RESEARCH INSTITUTE
2505 South 4th East
Salt Lake City, Utah 84115

Dear John:

During the reading of the book you wrote in memory of your father, T. Henry Moray, I became saddened by the terrible treatment he received at the hands of his so called 'friends'.

In a letter to Senator Dennis DeConcini, I wrote about the terrible treatment of inventors, among whom I included your Father's disastrous treatment at the hands of the U.S. Government.

New and exciting developments have taken place with regard to a Senate Subcommittee hearing with the Patent Office, in order to help the inventors of our country. The reason for this letter is that at long last there is some opening about to take place. Senator Dennis DeConcini of Arizona is heading a committee to investigate the workings of the Patent Office and to establish how he can best break the barrier for the inventor within the United States. I am most excited over this development and hopefully inventors will get behind Senator DeConcini and give him the additional clout he needs to achieve what is worthwhile.

I send you his Washington address with hope that you will have the desire to join in and write him, which of course would give him encouragement. Perhaps you might want to send the packet of information along to other inventors in order that we may take this opportunity to make our voices constructively heard. You will find enclosed the total packet of information sent to Senator Dennis DeConcini, Senate Hart Building, #328, Washington, D.C. 20510.

Take note of the good possibility that you may have recourse to the government whereby they would possibly have to reimburse you some financial consideration. I am convinced that this is a good possibility and perhaps it would behoove you to write Senator DeConcini himself and inquire as to this issue. Perhaps we will eventually find that banding together with the right intentions does work.

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski

P.S. I would be most interested to hear from you.

Free Electricity Generated From The Radiant 'Cosmos'

Generating electricity without burning fuels, atomic energy or using the sun's rays is not only possible – it's been done!

More than 40 years ago Dr. Thomas Henry Moray of Salt Lake City did it. He demonstrated on numerous occasions that he could generate electric power from a natural source he called "radiant energy."

Far ahead of his time, Dr. Moray used a simple antenna, solid state electronic circuitry and specially designed cathode ray tubes to generate amazingly large amounts of useful electricity from a seemingly mystical source.

During the 1930's he demonstrated his invention on land, in the air and even under the water to the sheer astonishment of engineers and scientists.

The Rural Electrification Administration, a federal bureau, was ordered to work with Dr. Moray on his invention, which took 20 years and $200,000 of his own money to develop.

An REA engineer named Felix Frazer went berserk and smashed the Moray device with an axe. It was never rebuilt. The frustrated inventor could not afford to duplicate his invention and he went to his grave many years later convinced that the destruction of his device was part of a communist plot.

Scientists today know that his achievement was of major importance for mankind, and many of them are trying to duplicate his work. His son, John Moray, also an electronic engineer, is among the group trying to recreate the genius of his father.

The Moray story is an amazing tale of human attainment and human ignorance ... and, it's true.

"The energy source which my father harnessed was not derived from any known prime mover. He harnessed a universal source which pervades the earth's surface," John Moray explained to NEWSREAL.

"Dad's device was truly amazing," the younger Moray continued, "it produced useful power below the surface of the sea, under the earth's surface and in flying aircraft.

"He had perfected his device to the point that it could be operated with remarkable consistency. He verified his work before hundreds of witnesses, many of whom had excellent professional and technical credentials," John Moray added.

Major business concerns and the federal government were fully aware of Dr. Moray's device and in the later 1930's engineers from the REA were ordered to work with him by President Franklin Delano Roosevelt.

A controversy grew between the inventor and the government engineers and Dr. Moray charged that the REA was trying to sabotage his work.

The entire truth may never be known, but it is a fact that Fraser became enraged and grabbed up a sledge hammer and smashed Dr. Moray's device to pieces.

"Dad believed to his dying day it was all part of a communist plot," John Moray said.

"He had refused to cooperate with certain known communists so his invention paid the price," Moray added.

In addition to having his device smashed, Dr. Moray was shot in a gun battle that took place in his laboratory. "It certainly smacks of some kind of conspiracy," the younger Moray mused.

The tragedy of it all was in the fact that Dr. Moray's years of research and development, and his entire fortune were wiped out when the hammer smashed his device.

"Because of the expense and hardship in rebuilding the generator, which the patent office had refused to consider, my father never actually completed more than one unit at a time as he perfected it.

"Each updated model used parts from the previous model as he made improvements in successive stages."

Another factor in the total destruction of this marvelous technology was the demise of the various companies that provided Dr. Moray with components. Both the Great Western Radio Co. and the Baldwin Electric Co., which he worked with vanished as part of his resources.

"Inflation, the massive war effort and threats to my father's life spelled doom to any ideas he may have had for replacing the destroyed generator device," the younger Moray claimed.

Today John Moray heads a small, non-public Research Institute, Inc. of Salt Lake City, and is now attempting to raise funds to rebuild the fantastic Moray generator.

"We have all my father's notes, and we're certain we can rebuild a working unit, but at today's costs it may be a multimillion dollar project."

Other experts, who have been curious about the Moray device for years, feel the younger Moray can recreate his father's genius and that it's more than a matter of money.

However, more than $200,000 in the late 1920's and early 1930's would indeed translate into many millions today.

The story of how Thomas Henry Moray came to invent the "technology of the future" so long ago began in the year 1901, when the inventor was a mere nine-year-old boy ... who had started a laboratory in his home.

"He had a paragraph from one of Nicola Tesla's books stick in his head when he was a very young boy," John Moray said.

"That paragraph stated, in essence, that a form of energy pervaded the universe and if the energy was kinetic, not static, it could be used to generate power."

Tesla was astounding the 19th century scientists with his electrical experiments when Thomas Edison was still a child.

It was Tesla who developed the theory of alternating current that is used to power our technology today.

By the age of 19, Thomas Henry Moray was a principal owner of the Independent Electric Company, Salt Lake City.

He was a prolific student and managed his time well. While serving his

Mormon missionary service in Sweden, he earned his doctorate in electronic engineering.

By 1921 he had established a reputation as one of the finest electronics engineers and he entered private research.

With the words of Tesla still resounding in his mind, he began seeking a way to harness the radiant energy from the cosmos, or as Tesla called it, harnessing the very wheelwork of nature.

By 1936 he had developed a generating unit that weighed about 55 pounds and was capable of obtaining as much as 50,000 watts of power on a steady basis.

"He tried to patent his device, but the requests were denied because the item he called the 'Moray valve' was too new a thought for the patent examiner. It was actually a germanium transistor, and solid states were unknown at the time," John Moray said.

The patent examiner reported that he could not allow the patent because he could not see how it would work since "the cathode had no means of being heated." The transistor did it, but since transistors were unheard of the patent examiner could not conceive of the idea.

Dr. Moray, therefore, is the father of modern electronics since his work predated the Bell Laboratory bipolar transistor findings by at least 20 years.

As with all genius, Dr. Moray had great difficulty in convincing the "experts" of the veracity of his work.

"Despite all the hardship, my father retained his good sense of humor," John Moray reported.

"One time an expert in electronics watched an experiment and told dad that some batteries had to be hidden somewhere in the device.

"So dad grinned and said softly, 'they're in the wood' and pointed to the wooden box that housed the tubes and working of the generator. The engineer actually drilled holes all over the box looking for the batteries that didn't exist while dad roared with laughter."

Many of the experts who saw the Moray experiments and demonstrations did not deny what they saw, however. In 1973, Lt. Col. Thomas Bearden, a nuclear engineer with the Army Missile Command, wrote of the Moray experiment which he had witnessed:

"It was not mumbo-jumbo, or mythology, or some kind of trick, but a legitimate, widely recognized demonstration that got electricity out of thin air."

John Moray's research institute has on file a number of sworn affidavits signed by experts who verified the truth of the Moray generator.

On several hundred occasions Dr. Moray lighted a bank of 35 light bulbs with power from his simple, ingenious mystifying device. There were 20, 150-watt bulbs on the panel. At the same time the generator powered a 600-watt glow heater and a 575-watt flat iron (see photos).

Today our technology must have tremendous amounts of electricity, so we burn tons of coal, or cubic miles of natural gas, or risk the dangers of radiation problems by splitting the atom to generate the necessary power.

Authorities know a major problem is on the horizon and there are serious programs looking into solar energy or thermal energy from hot spots within the earth. Since Dr. Moray and his generator is fact, not myth, why aren't the experts busy with a crash program developing his genius?

Men like Thomas Henry Moray are generally described as "being ahead of their time."

Why should such a saying even exist? People are not ahead of their time – that's impossible. They are ahead of other people and the other people simply don't listen.

ATTACHMENT

FACT: In 1973, as Governor of California, Ronald Reagan gave a government recognition certificate to Mr. Gray and his wife for their construction of a new energy saving motor.

QUESTION:

In light of this fact, Mr. Reagan, what has been done to further the advancement of this E.M.A. Motor? Was this just a token because it could not be overlooked?

THE ENGINE THAT RUNS ITSELF

An unconventional approach to harnessing energy has created a motor that requires no fuel and produces no waste. Its inventors say it is the answer to man's transportation and power problems

BY JACK SCAGNETTI

CATASTROPHIC PROBLEMS, aren't they? Not only are we taking more out of the earth than the earth has to give, but we're also using what we take to ruin the air above.

Sitting in a small laboratory in Van Nuys, California is a curious creation which, based on the results of dynamometer tests and other rigid trials, claims to be the solution. It's called the EMA (electro-magnetic association) motor and, in technical jargon, is described as "digital-pulsed," "time-phased" and "servo-controlled." Developed by EvGray Enterprises, an independent research and development firm, the unique engine runs on the principle of electro-magnetic transformation.

In terms more meaningful to the layman, the EMA motor requires no fossil fuel, recycles its own energy, creates no waste and is extremely quiet. Its size, weight and horsepower ratios are comparable to motors and turbines now in use.

The EMA's only external power source consists of four 6-volt batteries which never need recharging and which have the same life expectancy as the standard automobile battery. EvGray claims the motor duplicates the power and torque characteristics of internal combustion engines of similar size and weight, and the Federal and State Air Resources Board has granted the inventors a permit to further prove this claim by installing the EMA in test vehicles.

Edwin Gray, Sr., president of EvGray, predicts production costs of the EMA will be comparable to present motors and maintenance costs will be far less. "The EMA motor promises to make the world a cleaner place in which to live," says Gray, who has spent 12 years developing the engine. "Perfection of the EMA motor as a generating source could mean the availability of inexpensive power to underdeveloped nations."

EvGray expects the mMA Motor—when tailored for specific applications—to become a desired replacement for virtually all power systems now in use. The full spectrum of possibilities includes: (1) industrial engines for application of portable welding generators, stand-by electric generators, portable battery chargers, portable power tools, portable lifting equipment, and industrial utility vehicles; (2) engines for agricultural equipment for use on lawn tractors, lawn mowers, soil and harvesting equipment, horticultural equipment, and irrigation booster pumps; (3) engines for building and construction equipment, including portable building equipment, concrete mixers, portable conveyors, portable compressors, and construction machinery; (4) aircraft, automotive and marine engines, including automobiles, trucks, outboard motorboats, auxiliary yacht engines, lifeboats, light aircraft, and auxiliary glider engines(5) engines for household and recreational equipment, including small lawn mowers, snowmobiles, golf carts and snowblowers; (6) engines for heavy transportation and stationary uses, including railroad locomotives, ships, pumping sets for atomic reactors, generator sets, and jet aircraft engines; (7) miscellaneous applications, including fire-fighting pumps, air-conditioning units for buses, refrigeration units for trucks, and special military purposes (generator sets, gas turbine, starter units, etc.).

LIGHTNING AND "ENERGY SPIKES"

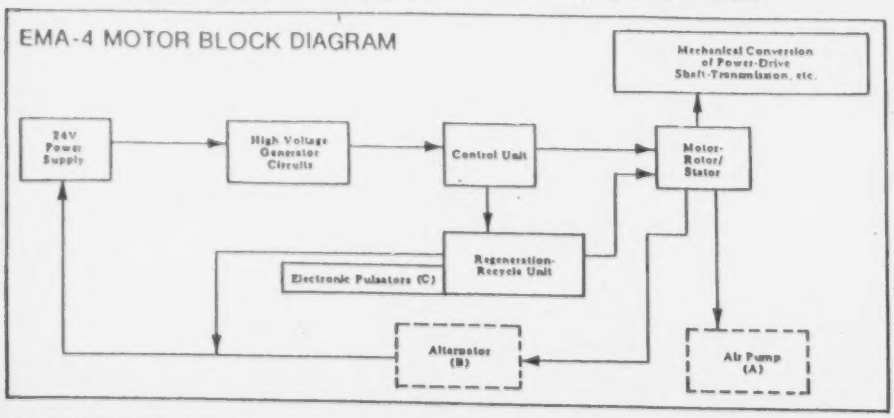
Gray describes the operation of his EMA motor as "similar to re-creating lightning." He says the engineering and scientific upon the characteristics and interrelationships between electrical, magnetic, and physical components. The EMA prototype motor has had considerable operating test time and has been adapted to standard and automatic automobile transmissions."

Dynamometer tests have recorded the rpm's of EvGray's motor at 2550 constant, the torque at 66 pounds constant. Brake horsepower is 32.5. After a test run of 21½ minutes, the battery voltage reading was 25.7.

Only three surfaces make physical contact with the motor, a feature which dramatically limits friction and increases efficiency. "An internal combustion engine is only 30 percent efficient," says Gray. "Our engine is 90 percent efficient." A prime factor in friction control is the so-called "magnetic vacuum," created in the drum, which literally takes the pressure off of end bearings and allows the rotor to float within the drum.

"Our motor creates power surges—one behind the other—in micro-seconds," says Gray. "By doing this, we are able to direct the magnetic flux field. The magnetic flux is a coolant source, so we need no cooling system."

Gray says the engine is not affected by rain, heat, cold, any other type of inclement weather, or by driving through tunnels. "All this motor needs is oxygen. The only external magnetic effect is that another field system cannot operate within this same battery system. The magnetic field orientation is 360 degrees in all directions."



BLOCK DIAGRAM OF THE EMA-4 shows how energy is transmitted from the four 6-volt batteries (power supply) to the various stages of the engine and returned. Both the air pump (A) and the alternator (B) are optional equipment. The air pump prevents condensation around the drum and provides added assurance of air in some environments. The alternator is not needed for most applications, including use in vehicles, but may be desirable in heavy generator rigs. The electric pulsators (C), which are contained in the regeneration-recycle unit, are capable of pulsing at 200,000 times per minute, and the pulsation at 60-to-120 amps is fed back to the batteries.

United States Patent [19]

Gray

[11] **3,890,548**

[45] **June 17, 1975**

[54] **PULSED CAPACITOR DISCHARGE ELECTRIC ENGINE**

[75] Inventor: **Edwin V. Gray**, Northridge, Calif.

[73] Assignee: **Evgray Enterprises, Inc.**, Van Nuys, Calif.

[22] Filed: **Nov. 2, 1973**

[21] Appl. No.: **412,415**

[52] U.S. Cl. **318/139**; 318/254; 318/439; 310/46

[51] Int. Cl. **H02p 5/00**

[58] Field of Search 310/46, 5, 6; 318/194, 318/439, 254, 139; 320/1; 307/110

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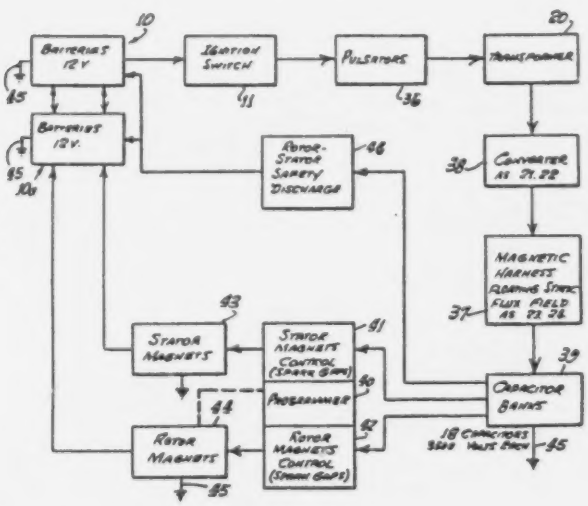
Primary Examiner—Robert K. Schaefer
Assistant Examiner—John J. Feldhaus
Attorney, Agent, or Firm—Gerald L. Price

[57] **ABSTRACT**

There is disclosed herein an electric machine or engine in which a rotor cage having an array of electromagnets is rotatable in an array of electromagnets, or fixed electromagnets are juxtaposed against movable ones. The coils of the electromagnets are connected in the discharge path of capacitors charged to relatively high voltage and discharged through the electromagnetic coils when selected rotor and stator elements are in alignment, or when the fixed electromagnets and movable electromagnets are juxtaposed. The discharge occurs across spark gaps disclosed in alignment with respect to the desired juxtaposition of the selected movable and stationary electromagnets. The capacitor discharges occur simultaneously through juxtaposed stationary movable electromagnets wound so that their respective cores are in magnetic repulsion polarity, thus resulting in the forced motion of movable electromagnetic elements away from the juxtaposed stationary electromagnetic elements at the discharge, thereby achieving motion. In an engine, the discharges occur successively across selected ones of the gaps to maintain continuous rotation. Capacitors are recharged between successive alignment positions of particular rotor and stator electromagnets of the engine.

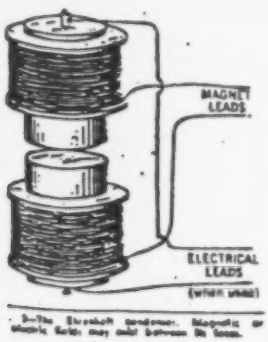
18 Claims, 19 Drawing Figures



TITLE: EHRENHAFT, Felix: MICRO-MAGNET

Felix EHRENHAFT: Micro-Magnet Particles —— Between the 1920s & '40s, Prof. Felix Ehrenhaft (Dir., Physics Inst., Univ. Vienna) performed numerous experiments with 'impossible' anomalous magnetic phenomena that upset all ideas about magnetism. Dr. Ehrenhaft was able to decompose water with permanent magnets — and the Alnico magnet suffered a marked loss in strength (10% in 24 hours!). This offers evidence for the existence of a 'magnetic current' (Ehrenhaft's 'Micro-Magnets' -- nowadays called Monopoles). His discoveries were confirmed by others, & it was speculated that the tests might "lead to momentuous applications in power machinery of the future" — but not yet, folks...The implications of Ehrenhaft's experiments have been nearly forgotten and now beg for replication and development. Here is a worthy project for both students & graduates...Complete with experimental details, illustrations of equipment, etc... 10 Articles... 48 pp.....
PRICE: $ 8

F. EHRENHAFT: Micro-Magnet German Articles —— 12 Articles in German, supplements the English articles above... 200 pages...
PRICE: $ 18



ATTACHMENT

Highlights:

Page 3 - See marked Paragraphs
Page 4 - Whole letter.
Page 5 - Testimonies with photos.

FACT: In working with a partner of Rory Johnson who invented a Magnatron motor I found that there was no existing patent or similar motor design.

QUESTION:

Rory Johnson, inventor of the Magnatron Motor stated that he filed for several patents on the unit. Why wasn't he given patents when he openly stated he applied for numerous patents on his design.

QUESTION:

In reference to the above, Johnson's partner is still trying to get a patent to no avail. Why? Were they confiscated by the Defence Department as Johnson feared? If so, did they have a legal right?

FACT: State Senator Marion Menning of Minnesota requested information from Senator Dave Durenberger of Washington, D.C., asking for information concerning why Johnson was given a restraining order.

QUESTION:

Was there a reply to the Senator and what was the reply?

Letter From Minnesota State Senator Marion Menning

July 2, 1979

Senator Dave Durenberger
353 Russell Senate Office Bldg.
Washington, DC 20510

Dear Senator Durenberger:

Several months ago a new type of machine was developed by Mr. Johnson of Magnatron, Inc., at Elgin, Illinois. This engine runs on a fuel cell which only needs to be refueled once every 100,000 miles. I am enclosing some information on the Magnatron engine.

Several very close associates of mine have been to Elgin, Illinois, to see the engine and they know the engine works. It is not just some wild idea that somebody has.

The reason I am writing you a letter is that a restraining order has been placed on Mr. Johnson, the Chairman of Magnatron, Inc., prohibiting him from producing the engine. I have been trying to find out the reason why. Mr. Johnson does not know why either. Would you please send a letter or make a telephone call to the Illinois Attorney General's office and ask what's going on and why they are trying to stop production of this engine. The attorney general's phone number is 312-793-3444. Mr. Overhard is in charge of the case. I would appreciate your cooperation in this matter.

Sincerely,

Marion Menning
State Senator

525 H.P. From Laser Activated Motor

The February issue of the Roseau, Minnesota Farmers Union Oil Company News Letter carried a front page account of a new self contained electric motor that will power a car for 100,000 miles on less than two pounds of fuel...will produce 525 horsepower and is self contained with a weight of 475 pounds. We were at once sceptical and yet so extremely interested that our publisher, Rick Marzicola hopped a jet to Chicago to gather information, photos and have a look in person.

Rory Johnson, President of Magnatron, Inc., and inventor of the proposed laser activated power source said that the early report was factual and described his invention as being a combination electric drive and generator with a fuel cell to supply constant power.

The fuel concept is new, using Deuterium and Gallium fused by a miniature laser prism. The fuel cell is guaranteed by Magnatron to last 100,000 miles in normal use and the motor parts will be warranteed for 15,000 miles or 15 months, whichever comes first.

Johnson said that the motor r.p.m. is 8,000 with a gear ratio of 2:1. Lubrication for the sealed, no exhaust, no emissions, motor is Mobil 1 synthetic which will not need changing for the full 100,000 miles and will not use a filter due to non-introduction of foreign materials such as carbon and varnish which are found in the internal combustion piston engine.

Fuel for the new power source is plentiful, says Johnson, since Deuterium is derived from water and Gallium is derived from Aluminum Bauxite, three parts per mil all over the face of the earth.

Potential uses and markets seen by Magnatron are in transportation and energy production such as a replacement for steam boilers, turbines and auxilliary power for industry with home generator usage possible. Johnson [illegible] privately fed [illegible] power farm tractors and trucks with personal transportation vehicles being fitted second. Magnatron says the new power source would be highly adaptable to boats, ships, and air use.

A public demonstration of the new power source is scheduled for the very near future, says Johnson, with four Magnatron equipped vehicles traveling across the United States in such a manner that practically every citizen will have a chance to see the new motor on a first hand basis. Also, one special vehicle will take a surprise route coast to coast on an un-announced schedule, while itineraries for the other vehicles will be publicized prior to arrival (see next issue for itinerary).

Production is proposed to begin after the public demonstration and with current facilities Magnatron estimates a maximum of 100 units per day could be constructed. Plans are in the works to construct a larger manufacturing plant on a 65 acre plot in Illinois with national distribution to follow.

In addition to the driving tests, Magnatron plans to send three motors to independent labs for testing and install several others on various farm equipment including grain storage and drying equipment. Popular Performance Boat Magazine will have an up-dated story next issue including the drive plan itinerary. Magnatron stated that due to the volume of mail being received, only those inquiries with self addressed stamped envelopes will be answered.

DAILY COURIER NEWS
DEC. 28, 1978

Skeptical crowd looks at engine

By Mike Bailey

Hundreds of curious people filed solemnly through Magnatron Inc., 181 S. Grove Ave., Elgin, all day Wednesday, for the first public showing of the electrical engine which reportedly runs without fossil fuel.

The manner of the crowd was subdued and the general reaction was one of skepticism, with opinions sharply divided.

Most of the 300 or more people who went through the showroom left disappointed because they did not see the engine in operation.

But some who were there when television crews from ABC in Chicago and ABC network television taped interviews, did see the engine run. What they saw was the engine turn belts to operate an alternator and power steering unit. The engine was not connected to the drive shaft of the old Chevrolet in which it is mounted, because company officials said they were afraid of someone being injured.

THE ENGINE'S inventor, Rory C. Johnson, of Elgin, identified himself publicly for the first time Wednesday as he answered questions from television reporters.

Two television personalities, one from the Chicago news team and the other from national television, saw the engine in operation and interviewed Johnson. Both gave the impression they were skeptical about his claims as to the performance of the engine and did not appear to be satisfied by some of his explanations.

Their reactions mirrored those of some of the people who filed through during the seven hours Magnatron was open to the public.

"I think this is a big bunch of BS," said George Bury, an engineer from Antioch.

"THE ONLY THING I'm convinced of is that it's a fraud. Based just on what they told us, there's no way that this could work. If there's something else involved in this, well, it's possible, anything's possible.

"But this explanation does not sound even remotely possible," he said.

Dr. Jack Volkers, an Elgin physicist, said he sincerely doubted that the engine would work as Johnson claims it will.

"I've seen nothing to make me believe that anything they have here will ever work.

"The government has spent millions of dollars to contain a fusion reaction (Johnson claims his engine's power is derived from fusion) and they can't do it. We're told here today that's it's been done by this one man. There's no shield to protect the driver from neutron bombardment. There's just too many unanswered questions," he said.

JACK SIMPSON, OF Washburn, Ill., didn't agree.

"They've had me convinced for a long time. I've been hearing about this for a quite awhile. We know someone who's getting a dealership.

Simpson said he had not seen the engine run but it didn't really matter to him.

"I know someone who said he saw it run. I can understand why he didn't run it today. It didn't really bother me that I didn't get to see it run," he said.

But not everyone was so satisfied.

"I'm interested in it, but it would have been more believable to me if I could have seen it running," said Trecile Huddleston of southern Illinois, who said he first heard of the engine about a year ago.

Both Leo Hohmann and Harold Gottman of Elgin said they had not come to any conclusion about the engine or its validity.

"I DIDN'T GET enough information about it. I want to know how much he's going to ask per share (on investments). If you get a trade-in credit when you convert your engine, things like that. I thought the demonstration was very poorly handled. I asked questions and no one seemed to know the answers. I didn't see anything run. They should have showed how it works," said Gottman.

Both said they were hopeful, but neither was convinced.

"It sounds a little farfetched to me. I believe anything's possible though. We can always advance our technology, but I didn't see anything here that really convinced me," said Orville Shelton, a former Elgin resident now living in Arkansas.

"If this is for real, and it looks like it is, then its great. I am convinced that we're due for something like this," said Vince Frisby of Aurora.

"I WAS CONVINCED it worked even before it ran," said Bill Grant of Elgin, who stood outside Magnatron early Wednesday afternoon and saw the engine run for camera crews.

"That made a believer out of me," he said.

"I think it's going to revolutionize the world. I was convinced before I saw it run," said Walter Rodholm, of Elgin, who also saw the demonstration.

"I've been interested since I first heard about it. I've been convinced for a long time that it actually works," said M. Christensen of rural Elgin.

"I have a lot of doubts about this," said Brian Getzelman of Elgin.

"I asked him (the man making the presentation) what the byproducts of this reaction were and he said there weren't any. That means everything inside is converted to energy. Not even the sun can do that," he said.

"I READ THE STORY in the paper and I'm even more skeptical now that I've seen it," said Paul Larson of Elgin.

"I can't believe these small bottles contain enough fuel to power a car for that distance. The fact that I didn't get to see it run really had a negative effect on me," he said.

Johnson is undaunted by the nonbelievers and said his next step is put together 25 engines which he will submit for testing and demonstration.

He mentioned the federal Bureau of Standards, Underwriters' Laboratories and Ralph Nader's group as possibilities to conduct tests.

But he admitted to one interviewer that people may be skeptical about investing in his engine until those tests are complete.

Over 200 seek to buy or invest

About 100 persons who saw Wednesday's engine unveiling at Magnatron Inc., 181 S. Grove Ave., Elgin, were convinced enough to fill out cards indicating they were interested in investing in the company.

About 125 others filled out cards indicating they wanted to buy an engine.

The next step, according to Magnatron officials is to contact those persons interested in investing and assemble them for a private showing of the engine in operation, similar to one given for television crews Wednesday.

Rory Johnson, president of Magnatron, said he has a prototype of the engine in a 1974 full-size car, but will not show it to anyone because he says it differs from the production model.

Would-be investors, therefore, probably will not see the engine pull a car. And in interviews with the Courier-News, many of them said seeing the engine drive a car would be mandatory before they would invest.

"I'M VERY interested in this project," said one man who asked to remain anonymous. "But I'm going to have to see some real hard proof before I invest. I'll want to see this tested by someone and approved before I put any money in it," he said.

Others said they did not need that much proof.

Several mentioned wanting dealerships, although at Wednesday's demonstration, that aspect was not completely explained.

Johnson did not indicate when he would ask serious investors for money, but said it would be prior to mass production.

He did not say if he would wait until after testing had been completed before requiring investment, but indicated in one interview that he was thinking of a stock issue.

ATTACHMENT

FACT: Trombly and Kahn, two brilliant young American physicists built a motor called an N-Machine. They filed for a patent in 1985 and received a Secrecy (Gag) Order from the Pentagon D.O.D. In this case the Pentagon issued the Secrecy Order, yet in turn the Commissioner of Patents sent the inventor's patent applications to the Atomic Energy Commission, the Secretary of Defense and the Chief Officer of any other government agency, that he so chose. Do these agencies have the right to confiscate, use and at the same time send a Secrecy Order? Where is the government over-stepping their boundaries and taking away the inventor's constitutional and legal rights?

QUESTION:

Since the gagging time appears to be automatically extended, as determined by the Commissioner of patents, of what value is it for the inventor to have the right to appeal to the Secretary of Commerce?

FACT: When being sent a Secrecy Order an inventor is now threatened with up to 10 years imprisonment and paying thousands of dollars in fines depending on what the invention was. Who determines the sentence and the fine? What's the actual legality here?

QUESTION:

Is it correct that over 3,000 written Secrecy Orders have been sent to inventors over the past 35 years? If so, how many have been utilized by different government agencies and what is the dollar amount that has been earned by the government from this confiscation process? Have any of these patents been sold by the U.S. Government to other countries?

1957

LETTER FROM GERALD J. ORLOWSKI

September 8, 1987

Mr. Bruce DePalma
1060 Channel Drive
Monticeto, California

Dear Mr. DePalma:

I am writing in reference to an article that you wrote titled, "Critique of the N-machine constructed by Trombly and Kahn". This article was sent to me by Rex Research, a company which distributes many important pieces of historical data and information.

The terrible treatment of Trombly and Kahn by the Department of Defense, as ordered by the Congress has not gone unnoticed. Over the past several months we have been sending out letters and information to scientists, physicists, the Patent Office and our local Senator, to focus attention on the unjust treatment our inventors (including Trombly and Kahn) are receiving by being gagged.

It is vital that you try to get the enclosed information to Trombly and Kahn, Acme Energy Co., so that they might understand that they are seeing the magnification of an energy on their scopes which is not necessarily all electrical. It may have some electrical properties but it is in fact the energy source for our future. It is magnetic current which is a flow of energy in energy, which adds no pollution to our earth system. If you will read the enclosed letter sent to Estelle Condon of N.A.S.A. Space Center, you will get the full impact on just how necessary it is for mankind to be allowed to use magnetically powered devices and energy. Some of the agencies and scientists who were sent this same packet of information are:

National Association of Academies of Science
National Research Council
National Science Foundation
New York Academy of Sciences
National Oceanic and Atmospheric Administration
World Meteorological Organization, Geneva, Switzerland
Many professors and scientists

Please convey the message to Trombly and Kahn that their plight has not gone unnoticed. We will continue writing until the needed government doors are opened, lifting the restrictions on the use of safe magnetic energy devices.

Thank you for your help.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

1958

DE PALMA INSTITUTE — Santa Barbara, California

11 October 1985

Critique of the N-machine constructed by Trombly and Kahn by:

Bruce DePalma

Recently the International Patent Application of Trombly and Kahn, (assigned to Acme Energy Co., of San Rafael, California), has become public property under the PCT (Patent Cooperation Treaty) and can be obtained from the International Bureau of the World Intellectual Property Organization. A copy of this patent application is attached. The difference between international patents and the U.S. patent system is that in the U.S. the material of the patent is secret until the patent is granted, while overseas the application itself is the basis of the patent; which stands until challanged by a third party.

Thus although Adam Trombly, the senior designer of the machine, has received two written gag orders from the pentagon D.O.D., forbidding him to reveal details of the machine -- upon threat of ten years imprisonment for violating security relating to homopolar generator design; -- through the very nature of life itself by a totally automatic process, the attached document falls into the public domain.

The attached patent application and drawings represent the result of the expenditure of $290,000.- in two phases. The DOD imposed secrecy has prevented any recompense whatever from acruing to the men who performed this work. What is described is a machine, an electrical generator whose output exceeds the input by a factor of 4.92.

Summary of Machine Parameters:

rotor O.D.	14.0 inches		
rotor length	9.25 "		
internal rotor diameter		6 inches	
shaft diameter (at widest point)		2 "	
speed	7,200 r.p.m.		
field	15,000 gauss	@	150 watts field input
voltage output	2.9 volts d.c.	@	15,000 amperes

no load drive motor (d.c.) input: 1.8 - 1.9 Hp. (1340 - 1470 watts) windage & friction

loaded drive motor input: 10.8 Kw., 14.5 Hp.

DePalma - Trombly N-machine

machine internal resistance: 6 - 10 micro-ohms

reported output power: 43.7 Kw. (maximum achieved 45.8 Kw.)

power gain of machine 45.8/9.3(drag due to current withdrawal)

= 4.92

In the above figure the 150 watts consumed in exciting the magnet is a negligible factor.

The numbers in the above list of machine parameters which were not included in the patent application have been obtained in private communication with Adam Trombly. The U.S. patent application was rejected twice on the grounds of impossibility that the machine could work, and then the authors were warned not to publish any information on the basis of violation of secret homopolar generator work being done concurrently in the DOD.

Technical Comment:

Trombly and Kahn are two of the brightest young physicists in America today. Their work is of the very highest quality and is reflected in the enclosed report. Technically what was done represents the first stages of the development of the N-machine as an article of commerce. Particularly two items are important.

Closure of the magnetic field path in the Trombly machine allows for high magnetic field strength to be obtained with little effort, i.e. 150 watts of excitation. Strong magnetism in the N-machine rotor results in high voltage output but at the expense of increased drag. Extraction of current from a machine of this type wherein current is taken out through holes in the magnets, (Be-Cu shaft ir. iron rotor), as well as flowing radially inward, (to the edge of the disc liquid metal contact), through the outer flux return path causes a reverse motoring action which increases the drag of the machine. If the gap between the outer rotor annuli were increased the flux in the central core would decrease but also would the drag of the machine brought about by the anti-motoring action.

Experience as well as design philosophy will decide the proper balance between drag and power gain in a particular machine. In the earlier "Sunburst" machine drag was minimized by not closing the flux path and operating the machine in a totally non-magnetic (brass and wood) enviornment. Here the measured power gain was 28:1 at 10 Kw. output, (1.5 v.d.c. @ 6700 amperes). However much more power was consumed in exciting the magnet of this machine, i.e. 4 Kw. vs 150 watts for the Trombly machine.

A major factor is the construction of the liquid metal brush system, which makes possible the power potential of a low voltage, very high current machine.

1960

SECRECY ORDER

(Title 35, United States Code (1952), sections 181-188)

NOTICE: To the applicant above named, his heirs, and any and all his assignees, attorneys and agents, hereinafter designated principals.

You are hereby notified that your application as above identified has been found to contain subject matter, the unauthorized disclosure of which might be detrimental to the national security, and you are ordered in nowise to publish or disclose the invention or any material information with respect thereto, including hitherto unpublished details of the subject matter of said application, in any way to any person not cognizant of the invention prior to the date of the order, including any employee of the principals, but to keep the same secret except by written consent first obtained of the Commissioner of Patents, under the penalties of 35 U.S.C. (1952) 182, 186.

Any other application already filed or hereafter filed which contains any significant part of the subject matter of the above identified application falls within the scope of this order. If such other application does not stand under a secrecy order, it and the common subject matter should be brought to the attention of the Security Group, Licensing and Review, Patent Office.

If, prior to the issuance of the secrecy order, any significant part of the subject matter has been revealed to any person, the principals shall promptly inform such person of the secrecy order and the penalties for improper disclosure. However, if such part of the subject matter was disclosed to any person in a foreign country or foreign national in the U.S., the principals shall not inform such person of the secrecy order, but instead shall promptly furnish to the Commissioner of Patents the following information to the extent not already furnished: date of disclosure; name and address of the disclosee; identification of such part; and any authorization by a U.S. Government agency to export such part. If the subject matter is included in any foreign patent application, or patent this should be identified. The principals shall comply with any related instructions of the Commissioner.

This order should not be construed in any way to mean that the Government has adopted or contemplates adoption of the alleged invention disclosed in this application; nor is it any indication of the value of such invention.

ATTACHMENT

Section H - Summary

Highlights: Johnson Patent 4,151,431

FACT: 1980 Science and Mechanics will send you for the cost of $1.00 a copy of this inventor's patent before the Patent Office somehow changed it, then issued it showing false information.

QUESTION:

Was this graph changed by the Patent Office to show that the invention had minimal value or to make it difficult to reproduce? This very intricate art work cannot be the work of a patent examiner, therefore,..

QUESTION:

Is there a branch of the government assigned to do this patent modification work and how widespread is this practice?

United States Patent [19]

Johnson

[11] 4,151,431

[45] Apr. 24, 1979

[54] PERMANENT MAGNET MOTOR

[76] Inventor: Howard R. Johnson, 3300 Mt. Hope Rd., Grass Lake, Mich. 49240

[21] Appl. No.: 422,306

[22] Filed: Dec. 6, 1973

[51] Int. Cl.[2] H02K 41/00; H02N 11/00

[52] U.S. Cl. 310/12; 310/152

[58] Field of Search ..... 24/DIG. 9; 415/DIG. 2; 46/236; 273/118 A, 119 A, 120 A, 121 A, 122 A, 123 A, 124, 125 A, 126 A, 130 A, 131 A, 131 AD, 134 A, 135 A, 136 B, 137 AE, 138 A

[56] References Cited

U.S. PATENT DOCUMENTS

4,074,153 2/1978 Baker et al. 310/12

Primary Examiner—Donovan F. Duggan

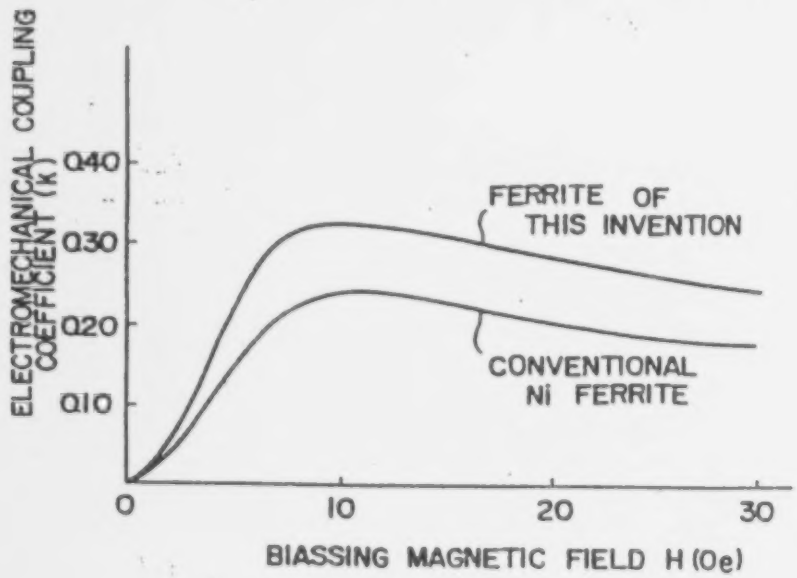
Attorney, Agent, or Firm—Beaman & Beaman

[57] ABSTRACT

The invention is directed to the method of utilizing the unpaired electron spins in ferro magnetic and other materials as a source of magnetic fields for producing power without any electron flow as occurs in normal conductors, and to permanent magnet motors for utilizing this method to produce a power source. In the practice of the invention the unpaired electron spins occurring within permanent magnets are utilized to produce a motive power source solely through the superconducting characteristics of a permanent magnet and the magnetic flux created by the magnets are controlled and concentrated to orient the magnetic forces generated in such a manner to do useful continuous work, such as the displacement of a rotor with respect to a stator. The timing and orientation of magnetic forces at the rotor and stator components produced by permanent magnets to produce a motor is accomplished with the proper geometrical relationship of these components.

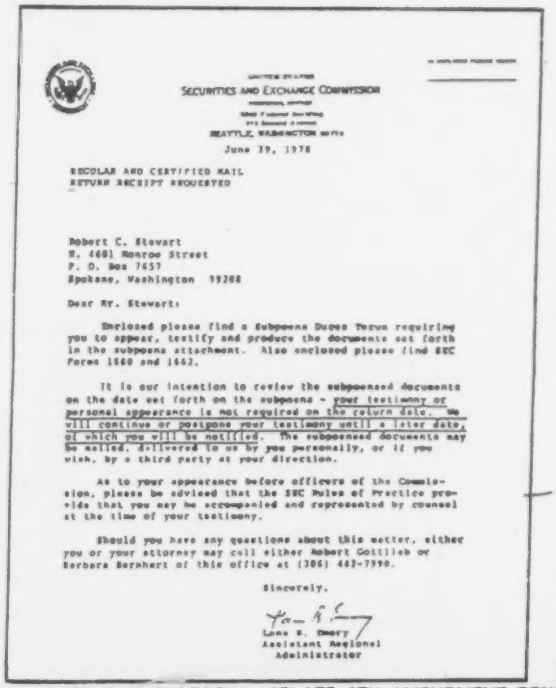
28 Claims, 10 Drawing Figures

The graph shown below is a patent office mistake – it belongs on an entirely different patent. Also – a feature length article on this invention was in the spring of 1980 issue of Science and Mechanics. We were unable to gain permission to reprint it for you, but Science and Mechanics will send a photo copy for $1.00 (please do not order from The Free Energy Press.)



DOES THE POWER LOBBY AND THE OIL COMPANIES REALLY CONTROL THE CONGRESS ?

AND , THROUGH THE CONGRESS, CONTROL SUCH AGENCIES AS THE I.R.S., F.B.I., S.E.C., THE JUSTICE DEPT., ETC. IF NOT, WHO ELSE WOULD HAVE AN INTEREST IN SUPPRESSING VALUABLE ENERGY TECHNOLOGY



SECURITIES AND EXCHANGE COMMISSION

SEATTLE, WASHINGTON 98174

June 29, 1978

REGULAR AND CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Robert C. Stewart
N. 4601 Monroe Street
P. O. Box 7457
Spokane, Washington 99208

Dear Mr. Stewart:

Enclosed please find a Subpoena Duces Tecum requiring you to appear, testify and produce the documents set forth in the subpoena attachment. Also enclosed please find SEC Forms 1660 and 1662.

It is our intention to review the subpoenaed documents on the date set forth on the subpoena - your testimony or personal appearance is not required on the return date. We will continue or postpone your testimony until a later date, of which you will be notified. The subpoenaed documents may be mailed, delivered to us by you personally, or if you wish, by a third party at your direction.

As to your appearance before officers of the Commission, please be advised that the SEC Rules of Practice provide that you may be accompanied and represented by counsel at the time of your testimony.

Should you have any questions about this matter, either you or your attorney may call either Robert Gottlieb or Barbara Bernhart of this office at (206) 442-7990.

Sincerely,

Leo B. Emery
Assistant Regional
Administrator

SUBPOENA DUCES TECUM

UNITED STATES OF AMERICA
SECURITIES AND EXCHANGE COMMISSION

To Robert C. Stewart

N. 4601 Monroe St. P.O. Box 7457 Spokane, WA

At the instance of the Securities and Exchange Commission *you are hereby required to appear before* Barbara E. Bernhart, Domingo Mercado, Police P. Coppelton and other officers of the Commission

of the Securities and Exchange Commission, at U.S. Federal Building, office of the U.S. Attorney

In the City of Spokane, Washington *on the* 2nd *day of* August, 1978, *at* 9:30 o'clock A *m. of that day, to testify in the Matter of* Stewart Energy Systems of Wash., Inc., et al., S-1583 *Investing* an order of investigation entered by the Commission pursuant to Section 20(a) of the Securities Act of 1933 and Section 21(a) of the Securities Exchange Act of 1934.

And you are hereby required to bring with you and produce at said time and place the following books, papers, and documents:

As set forth on schedule attached hereto.

Fail not at your peril.

In testimony whereof, the seal of the Securities and Exchange Commission is affixed hereto, and the undersigned, a member of said Securities and Exchange Commission, or an officer designated by it, has hereunto set his hand at Seattle, WA this 29th day of June 1978.

Barbara E. Bernhart

Barbara E. Bernhart, an officer

DOES THIS SUBPOENA VIOLATE 4TH AMENDMENT CONSTITUTIONAL RIGHTS OF THE PEOPLE TO BE SECURE IN THEIR PERSONS, HOUSES, PAPERS, AND EFFECTS, AGAINST UNREASONABLE SEARCHES AND SEIZURES ?

1962

1963

LETTER FROM GERALD J. ORLOWSKI

April 2, 1987

Senator Dennis De Concini
United States Senate
Subcommittee on Patents, Copyrights and Trademarks
Washington, DC 205 10-6275

Dear Senator De Concini:

Thank you for your letter of March 27. My prayers go with you as the task of overseeing the Patent Office is very formidable indeed.

The packet of information I sent was extensive and possibly my primary concern did not get highlighted as I had hoped. In Secrecy Order, Chapter 183, the government can confiscate and use any disclosed invention sent in by an inventor if they so chose, without proper remuneration. The problem as I see it is not the Patent Office, but what the Congress ordered them to do with patents. They send the patents to other government agencies as instructed, for their evaluation as to whether they want to use them or to establish if they could be a threat to the U.S. But we must remember, 1 million government employees have access to top secret information. How can the Patent Office give an inventor any assurance that their invention is safe when most of the thieves and traitors caught were current or former employees of the various U.S. Intelligence services, which include the CIA, FBI, NSA and the ONI? This information is from the latest World Book Encyclopedia, 1986.

Pertinent to this subject, I have relevant information on the Magnatron Motor and other inventions. I and other inventors are involved in working on various items that would benefit the United States. Many inventors are hoping you will be successful in having the gag order lifted so American inventors will have the opportunity to confidently file on their inventions in the U.S., knowing that the Government will protect the individual inventor. It is sad that 45% of U.S. patents are being issued to foreigners, while American creativity is being lost. We need men, dedicated as you and your committee are, to investigate this matter.

Again, we totally support you in this matter. I would like to meet with you here in Arizona at your convenience and discuss positive ways we might be of help to you. We love our Nation and desire to see America again be the world leader through new and useful innovations.

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI

March 19, 1987

Commerce Secretary Malcolm Baldrige
United States Government
Washington, D.C.

Dear Secretary Baldrige:

After reading of your battle concerning export reform in the Arizona Republic on March 13, 1987, I realized how much this effects the loosening of other government restrictions which have a negative effect for the United States in many areas.

As an inventor who can speak of feelings on behalf of all inventors, the frustration within this field is immense. Of what use is it to expend mind, energy and finances, to ultimately be defeated by an order so restrictive that it discourages any further productivity or even a desire to share it within the United States. See enclosed copy of packet of information sent to Senator Dennis DeConcini. Because of the confiscation by the military and the government's carte blanc confiscation, the United States has hindered the creativity of its citizens in many ways which is to say the least counter-productive.

I whole-heartedly support your efforts as well as people like Senator DeConcini who hopefully is taking a step forward in an effort to loosen the restriction of Secrecy Order (Title 35, United States Code (1952), sections 181-188.

Whether or not you find the enclosed material of value is up to you, but I feel it is worthwhile to share in that it gives you another understanding of the many people who fight however they can for the betterment of all mankind. Hopefully our government will begin to view that we are not alone and the world is now in a position where all nations must work together for the survival of our planet.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

Enclosure

INSIGHTS INTO THE PROPRIETARY SYNDROME

By KEN MacNEILL
Cadake Industries
Winter Haven, Florida

To give you some background on myself. I have been interested in the energy situation since I can remember. I have built all kinds of devices, solar energy panels, windmills, photovoltaic arrays, flywheel devices, and also carburetors of which I will talk on Sunday. In my background I am an accomplished tool and diemaker, moldmaker, been involved in Design Engineering for the past 12 years, primarily in the automation area.

My first real involvement with other people in this alternate energy area was at the Toronto Symposium in 1981 where I met George Hathaway as well as over 100 other people that believe in the impossible according to orthodox science. Since that time I have made myself aware of just about everything that is happening in this field, and believe me there are some really fantastic things going on. The rediscovery of some of the technology that was lost in the past is finally coming to realization, for instance the Tesla technology, the Hubbard device, the Moray approach to tapping into the free energy supply that we're sitting in without even knowing it.

A friend of mine gave me a real insight possibly without even knowing it. He said the problem could be solved by just considering the problem of weighing a glass of water at 500 feet under water. Here you are under water with a glass of water; how do you weigh it???

The analogy is the same for us. Here we sit in the vastness of the cosmos on top of one of the biggest magnets known to us and we are like the glass of water. We are in the vast ocean of energy. Look around us and watch just the weather for instance, the next thunderstorm, think of all the electrical potential being wasted. That energy is there; it is very real.

Tom Bearden, one of our upcoming speakers, may have illustrated it quite well by the bird sitting on top of the wire with 13,000 volts going through it. We all know that it could kill him but it doesn't. I am positive that within this group will be the ways and means for making the energy situation of the future change.

Now to the other side of the coin. Why has not this technology been allowed to become established? We have to look at the *profit motive* involved. If we have free energy, how will they charge us for it? What will happen to the billions of dollars that the utilities and the oil companies and the governments backing these establishments do if we can give the people independence from the chains of having to pay for energy?

One question that has been uppermost in my mind for the last year has been the rhetoric given by our elected representatives about the energy situation and the amount of money given to small researchers who could possibly give us a viable approach to becoming energy independent. Who gets the government money?? Let me get a little audience participation in the question. How many of you have all the money you need for research in the energy area? Everyone who has please stand!!!!! Now let me mention a few of the names of the companies that get the money. See if you recognize them: Exxon, Gulf Oil, General Electric, Westinghouse, TRW, Exide Storage Battery, all manufacturers or producers of fossil fuel products. We need to get away from the fossil fuels for the future and get into something that can indeed give us a future because we are rapidly depleting not only our natural resources but our air and water. All because of burning fossil fuels. We fund our universities and colleges in the most directed of ways. If you want to explore the possibilities in some of the more esoteric areas, for instance the ones you will be hearing about in the next three days, there is no money for that. WHY??? Because of the possibility that we might succeed. What would our government do if all the American people could go back and forth to work, heat their homes, run their businesses without paying taxes on gas and oil? Consider the fact that all of the gas stations would go out of business or would have to find other ways of making money. Many complimentary business would also fold. But alas this is America. What are we here for??? To perpetuate Big Business, Big Government, or to advance toward the future not expending all of our natural resources but to save them to make the goods of the future. Coal and oil both can be used for making all kinds of things besides fuels; the list is endless.

ALL LEGITIMATE BUSINESSES ARE CONTINUALLY BEING INVESTIGATED BY THE GOVERNMENT;

WHY AREN'T THE CRIMINALS?

AN OPEN LETTER TO PRESIDENT CARTER

April 25, 1978

Robert C. Stewart, Inventor
P.O. Box 7657
N. 4601 Monroe
Spokane, Wash. 99208

The President
The White House
Washington, D.C. 20004

Mr. President:

I find it necessary, Mr. President, to bring the following matter to your personal attention.

On October 23, 1970, Supreme Refrigeration, Inc., a Nevada corporation, was the victim of theft from interstate shipment. The subject theft occurred in the city of Las Vegas, Nevada.

I have presented irrefutable evidence to the FBI, and the U.S. attorney's office in Las Vegas, Nevada, which supports my allegation that the federal statute relating to theft from interstate shipment was violated.

Attorneys General Mitchell, Kleindienst, Richardson, Acting Attorney General Bork, and former Presidents Nixon and Ford have all been apprised of this situation. Mr. Benjamin Civiletti of the Washington Office of the Department of Justice should have a considerable amount of background information relating to this problem.

I have good and sufficient reason to believe that a proper investigation conducted at this time will reveal a wide-spread conspiracy to impede and to thwart the development of technology which will generate electricity on a large scale basis through the utilization of solar and free energy systems. Therefore, I implore you, Mr. President, to use your good offices and resolve this matter as soon as possible.

RESPONSE TO LETTER TO PRESIDENT

UNITED STATES DEPARTMENT OF JUSTICE

WASHINGTON, D.C. 20530

May 15 1978

JCK:ALH:CCB:mep
15-46-0

Mr. Robert C. Stewart
P. O. Box 7657
Spokane, Washington

Dear Mr. Stewart:

The President has asked that the Criminal Division of the Department of Justice reply to your letter of April 25, 1978.

Your letter refers to an alleged theft from interstate shipment which occurred in Las Vegas, Nevada, in 1970. This incident has been the subject of extensive correspondence between yourself and the Department of Justice. The facts of this matter have been fully reviewed on prior occasions by both the Criminal Division and the United States Attorney's office in Nevada.

We again note that both you and your attorney met with the United States Attorney in Las Vegas, Nevada, in 1971, to discuss this incident. It was the opinion of the United States Attorney that prosecution was not warranted. The Criminal Division has concurred in that opinion, as we have previously advised you.

Any previously unavailable information which you possess on this matter should be forwarded to the United States Attorney in Las Vegas, Nevada, for further review.

1966

United States Patent [19]

McClure

[11] **4,185,593**

[45] **Jan. 29, 1980**

[54] **TRANSFORMATION OF ELECTRICAL ENERGY TO PHYSICAL ENERGY**

[76] Inventor: **Kenneth S. McClure**, Rte. 1, Thayer, Kans. 66776

[21] Appl. No.: 571,975

[22] Filed: Oct. 31, 1977

[51] Int. Cl.[2] F02B 43/08

[52] U.S. Cl. ..... 123/1 A; 123/3; 123/25 B; 123/25 D; 123/119 E; 123/DIG. 12

[58] Field of Search ..... 123/1 A, 3, DIG. 12, 123/119 E, 25 B, 25 C, 25 D; 60/39.55

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2,780,602	2/1957	Berkman	123/191 A
3,318,293	5/1967	Hickling et al.	123/119 E
3,381,675	5/1968	Schiavone	123/193 H
3,444,098	5/1969	Bottazi et al.	123/191 A
3,648,668	3/1972	Pacheco	123/1 A
3,921,985	11/1975	Fimml	123/119 E
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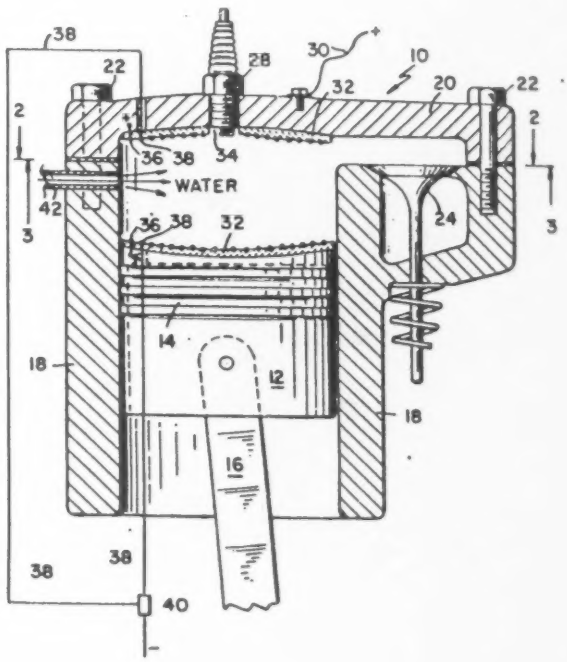
4,009,006	2/1977	Hreha	123/3
4,031,865	6/1977	Dufour	123/1 A
4,052,139	10/1977	Paillaud et al.	123/1 A

Primary Examiner—Charles J. Myhre
Assistant Examiner—Craig R. Feinberg
Attorney, Agent, or Firm—John H. Widdowson

[57] **ABSTRACT**

An improved means and process for providing for the removal of hydrogen from a catalytic cathode means whereby the hydrogen may be recombined with oxygen to provide explosive force to power an internal combustion engine.

13 Claims, 4 Drawing Figures



United States Patent [19]

Britt

[11] **3,977,191**

[45] **Aug. 31, 1976**

[54] **ATOMIC EXPANSION REFLEX OPTICS POWER OPTICS POWER SOURCE (AEROPS) ENGINE**

[76] Inventor: **Robert Gordon Britt**, 313 W. Fisher St., Salisbury, N.C. 28144

[22] Filed: **Aug. 14, 1974**

[21] Appl. No.: **497,335**

[52] U.S. Cl. ..... 60/509; 60/513; 60/721; 219/121 P; 313/226

[51] Int. Cl.[2] F01K 25/06

[58] Field of Search ..... 60/508-515, 60/651, 671, 650, 680, 669; 313/226; 219/21 P

[56] **References Cited**

UNITED STATES PATENTS

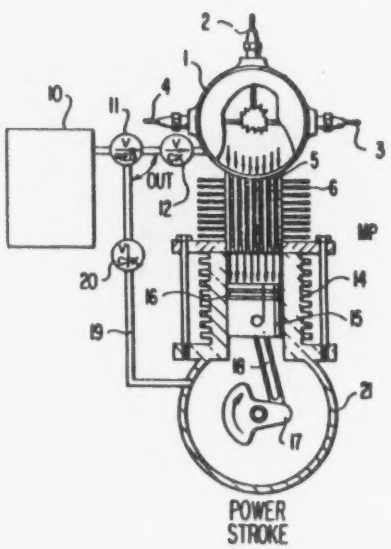
3,398,686	8/1968	Guin	60/513 X
3,609,965	10/1971	Hercher	60/513

Primary Examiner—Allen M. Ostrager

[57] **ABSTRACT**

An engine is provided which will greatly reduce atmospheric pollution and noise by providing a sealed system engine power source which has no exhaust nor intake ports. The engine includes a spherical hollow pressure chamber which is provided with a reflecting mirror surface. A noble gas mixture within the chamber is energized by electrodes and work is derived from the expansion of the gas mixture against a piston.

12 Claims, 7 Drawing Figures



United States Patent

Papp

[15] **3,670,494**

[45] **June 20, 1972**

[54] **METHOD AND MEANS OF CONVERTING ATOMIC ENERGY INTO UTILIZABLE KINETIC ENERGY**

[72] Inventor: Josef Papp, San Pedro, Calif.

[73] Assignee: Environetics, Inc., Gardena, Calif.

[22] Filed: Oct. 31, 1968

[21] Appl. No.: 772,077

[52] U.S. Cl. 60/23, 60/1, 60/27, 123/1, 176/39

[51] Int. Cl. F01k 27/00, F03g 7/06

[58] Field of Search 60/23, 25, 27, 1

[56] References Cited

UNITED STATES PATENTS

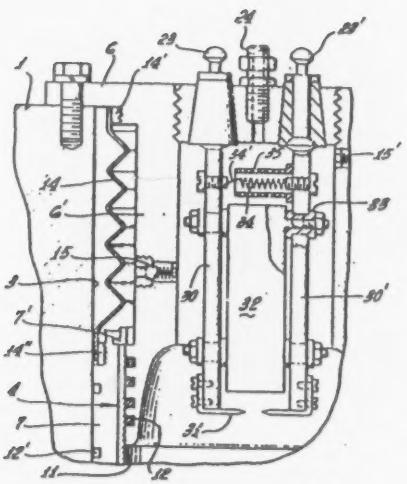
2,532,096	11/1950	Hartley	60/25
2,548,708	4/1951	Dickey	60/25
1,916,235	7/1933	Ruben	60/1

Primary Examiner—Martin P. Schwadron
Assistant Examiner—Robert R. Bunevich
Attorney—Miketta, Glenny, Poms and Smith

[57] ABSTRACT

Method of utilizing potential energy of atoms and various forms of radiation (electrons, photons, positrons, gamma beta and alpha radiations, etc.) in a controlled power generating system; effective mixtures of chemical elements adapted for use in the method; the preparation of charges of ingredients for use in virtually gas-tight power generating devices; the activation and control of such charges and devices; structural requirements of power generating devices utilizing the methods and compositions.

18 Claims, 4 Drawing Figures



INVENTOR REFUSES BILLION DOLLAR OFFER!

AUTO RUNS ON AIR!

By Gilbert Lawrence

"...Actually, they offered me over a billion dollars — but I was afraid the big three would just buy it up and never have any intentions of releasing it to the consumer!" — Lee Rogers, Inventor

The following feature, to many American Consumers, may seem difficult to believe. — It none the less is true! This is not just a story of one man's desire to overcome the suppression of massive odds against himself, but, entwined within his destiny and within his hands he may hold the future destiny of America and the free world. You may never need ask again, "Whatever happened to good old American ingenuity?...Where are the modern day Graham Bells, the Wright Brothers, Henry Fords and the likes?"

No doubt, we have all heard the expression "Don't look a gift horse in the mouth," but, who among us could look a billion dollar plus offer in the face and say - NO! Well, it may sound like a good plot for a television series (we all remember "The Millionaire"), but it's no fiction, it happens to be the truth. "The Big Three," apparently pooled their automotive fortunes and efforts to the tune of over one billion dollars! All they wanted in return were the absolute patent rights owned and already registered to Lee Rogers, for an automobile that literally runs on air.

Rogers, a forty-one year old residential contractor, from Iona, agricultural engineer, criticize Rogers' invention, saying, "Rogers might just as well use a horse to turn a windmill!" Further, Bagnall stated: "I would roughly estimate that it would take twice as much energy to fill the tanks and compress the air as the engine could ever produce. After all," Bagnall continued, "Rogers will have to use more fuel to compress the tanks of air than the auto normally would use!" Rogers, not one to be at a loss for words, countered Bagnall's attack with a chuckle, "the compressor will be continually fueled simply by the power from the engine itself."

As Rogers later stated in an exclusive Consumers Guide interview, "I work on one problem at a time. First, they told me it was impossible to run an auto engine on just plain 'pure' simple air — and I said, Why? After all," as Lee Rogers continued, "All gasoline does is create a 'hot' explosion driving the pistons up and down, and the only reason it's a hot explosion is because it's ignited. So, I got to thinking, no reason why the air has to be hot! Why not just regular cool everyday air like you and I breathe?"

"Sounds good," everyone would say, "but it'll never work!" "Well, I made it work! I proved it! I not only started it, and idled it (for many, many hours), but I took 'em for a drive in it. — Now let

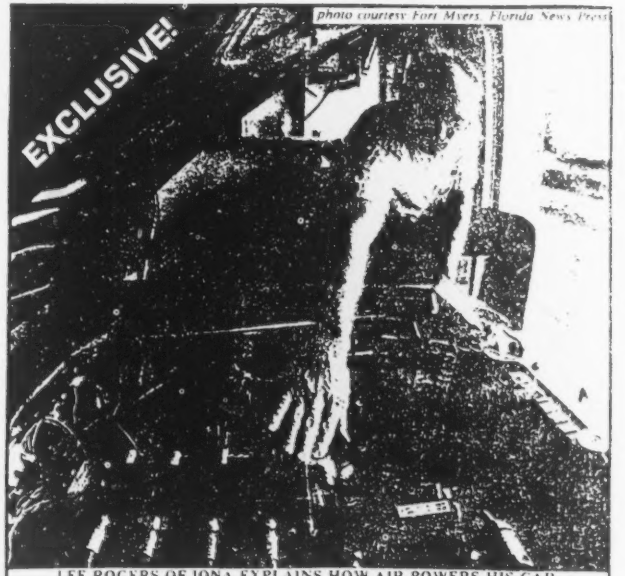


photo courtesy Fort Myers, Florida News Press

LEE ROGERS OF IONA EXPLAINS HOW AIR POWERS HIS CAR
...no other fuel is used to run the vehicle.

of fuel, that the farmers are presently faced with, food prices could be slashed.

* * *

Rep. Nuckolls personal aid, Jim Siford, stated to The Guide, "I remember the day we all went down to

"Well, Mr. Rogers opens up the garage door and there sits a regular looking 1977 Dodge stationwagon. After showing us the modifications, Mr. Rogers hops in and not only starts her up, he backs down his driveway and

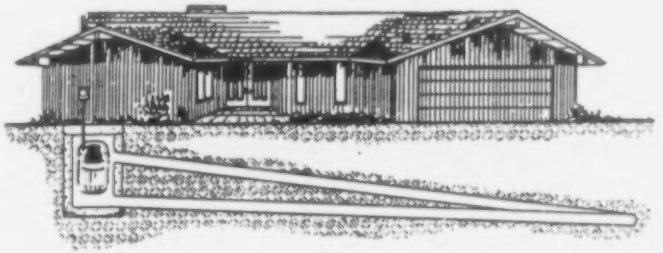
1970

Respectfully yours,

ROBERT C. STEWART, Inventor

***I cannot attend the town hall meeting with President Carter, but if some Spokane residents should ask the President why he has permitted this conspiracy and obstruction of justice to continue for so long, I will be very interested in his response.

AN EXAMPLE OF ENERGY TECHNOLOGY THAT IS BEING SUPPRESSED



THE HOUSE IN THE ILLUSTRATION ABOVE IS FITTED WITH A STEWART ENERGY SYSTEMS ELECTRICAL GENERATOR WHICH WILL PROVIDE ALL OF THE ENERGY NEEDED BY THE HOME FOR HEATING, COOLING, COOKING, HOT WATER, ETC. THE ONLY ENERGY REQUIRED BY THE ENGINE WHICH DRIVES THE GENERATOR WILL COME FROM LOW GRADE GROUND HEAT AVAILABLE TWO TO THREE FEET BELOW THE FROST LINE ANY PLACE ON EARTH. THIS IS THE BEGINNING OF A SERIES OF PUBLICATIONS WHICH WILL DISCLOSE THE MECHANICAL AND THERMODYNAMIC ASPECTS OF THE CYCLE. SYSTEMS WITH ENOUGH GENERATING CAPACITY FOR THE AVERAGE FOUR BEDROOM HOME SHOULD BE AVAILABLE IN THE NEXT TWO OR THREE YEARS FOR ABOUT $6,000.00 INSTALLED. THE LIFE EXPECTANCY OF THESE SYSTEMS WILL BE TWENTY TO THIRTY YEARS.

Sincerely,

JOHN C. KEENEY, Acting
Assistant Attorney General
Criminal Division

By: Alfred L. Hantman

ALFRED L. HANTMAN, Chief
General Crimes Section

THE ABOVE LETTER IS A THIRD PARTY RESPONSE TO MY LETTER TO THE PRESIDENT WHICH WAS PUBLISHED IN THE SPOKESMAN REVIEW AND THE CHRONICAL ON MAY 2ND, THE WEEK THE PRESIDENT WAS IN SPOKANE. THIS IS A TYPICAL RESPONSE FROM THE JUSTICE DEPARTMENT OF WHICH I HAVE HAD MANY IN THE LAST SEVEN YEARS. THEREIN LIES THE PROBLEM. AS LONG AS THE MATTER CAN BE CONTAINED IN THE JUSTICE DEPARTMENT, THE FEDERAL LAW IN NEVADA WILL NEVER BE ENFORCED. TWO U.S. ATTORNEYS FOR NEVADA HAVE RESIGNED WHEN CONFRONTED WITH IRREFUTABLE EVIDENCE CONTAINED IN A LEGAL TRANSCRIPT IN WHICH THE GUILTY PARTY RELATED IN HIS OWN WORDS HOW HE CONSPIRED TO STEAL AND DID IN FACT STEAL THE SHIPMENT OF REFRIGERATION EQUIPMENT OUT OF INTERSTATE COMMERCE. AT THIS TIME, AFTER ALL OF THIS MANEUVERING BY THE JUSTICE DEPARTMENT AND FEDERAL LAW ENFORCEMENT OFFICIALS IN NEVADA, I HAVE NO CONFIDENCE IN ANY INVESTIGATION THAT MIGHT BE CONDUCTED BY THEM. EVERY MEMBER OF CONGRESS WHO HAS BEEN IN OFFICE SINCE 1971 HAS RECEIVED AT LEAST 5 LETTERS IMPLORING THEM TO RESOLVE THIS MATTER. A FULL OPEN INVESTIGATION AT THIS TIME WILL REVEAL:

#1. THAT THE INTERSTATE THEFT IS ONLY PART OF A CATALOGUE OF CRIMINAL AND ILLEGAL ACTIVITY DESIGNED TO IMPEDE AND THWART THE DEVELOPMENT OF ENERGY TECHNOLOGY FOR WHICH THERE IS AN URGENT NATIONAL NEED AT THIS TIME.

#2. THAT THE JUSTICE DEPARTMENT HAS SENT FALSE AND MISLEADING INFORMATION TO MEMBERS OF CONGRESS WHO HAVE TRIED TO GET THE FACTS ABOUT THIS MATTER.

#3. THAT AGENCIES OF BOTH STATE AND FEDERAL GOVERNMENT HAVE BEEN AND ARE STILL BEING USED TO HARASS BACKERS AND ASSOCIATES.

I WROTE THE OPEN LETTER TO THE PRESIDENT IN THE HOPE THAT HE WOULD HAVE SOMEONE GATHER THE FACTS AND ENFORCE THE LAW. AT THIS TIME, I CAN ONLY ASK FOR PUBLIC SUPPORT IN MY EFFORTS TO HAVE AN OPEN AND FULL INVESTIGATION MADE AND THE CRIMINALS PROSECUTED.

Robert C. Stewart

1971

1972

EXCERPT

This book is dedicated to changing the way people think about energy. It is long past time for demanding some very basic changes. It is further dedicated to provoking people to act in every way they can think of to help bring about the necessary changes.

The average American spends $2000 per year on energy, an expense we simply shrug off as an unavoidable fact of life that nothing can be done about. Now most of us would tend to look upon taking something to which you have no right as stealing. If you walk into a bank and pull a gun and demand money, you are considered a criminal. But the very suggestion that we are in fact being robbed, never occurs to people and would be comical and laughable to some. Hopefully most of us stopped laughing long ago. When people see what this book contains, we are sure they will be ready to accept the fact that the energy situation either borders on, or is in fact, criminal. What else can we think? The evidence gathered here shows clearly that there are ways to produce all the energy we need without polluting the air, or burning non-renewable resources, and all without spending a sizeable portion of our incomes.

But what is the matter with people, that they can go on year after year, surrendered to what is virtually a form of slavery? What does it take to get some action? What is the answer? For sure there is no one answer. That's because the problem is not just one problem. But at the core of it is a simple thing. It is the one thing that is the most difficult for each of us to have to admit to. And that is our own ignorance. We are slaves because we don't know any better than to believe it when we are told by the energy authorities that there will be no viable alternate energy sources before the year 2000.

We are told in regard to free energy that "there is no free lunch", and at the same time the government spends millions on fusion research. Object? To obtain vast amounts more energy out of the fusion process than is put in. When we are faced with such an obvious contradiction from our so-called experts, the very people our leaders rely on for their "wisdom" and "expertise", is it any wonder we see bumperstickers these days urging us to "question authority"?

If we have any sense at all, we must question authority. Looking back on history it is easy to see that man has been wrong almost more often than he has been right. Most people once believed the world was flat and stood at the center of the universe. Was that a correct assumption simply because the authorities of that time said so? But they were ignorant "back then" you say? Then you mean that when Aristotle believed the purpose of man's brain was to cool the blood, he was just being ignorant, right? But that was "back then".

And when people thought if a man traveled faster than thirty miles per hour he would die of suffocation, it was just the ignorance of the times being expressed. And when the Manhattan Project began, the top British explosives expert who did not believe the A-bomb was possible, is excused for his attitude because back then they didn't know what we do now, so we can hardly blame him for being wrong.

More recently, at the beginning of the Apollo Moon Program, many people, some scientists included, did not believe man could reach the moon by the end of the decade. Have we since then sufficiently advanced ourselves to the point where we have the wisdom and ability (infallibility?) to know what is and is not possible? Really? "Back then" is now gone forever, and now we can believe what our "experts" tell us? When did this happen? We weren't aware of it. And what a shame to have missed such an historic event.

Baloney. From an historical point of view man's beliefs and concepts have almost as a matter of tradition had little to do with the reality of what was truly possible. That's as true now as it has been in times past.

Case in point: Just weeks ago our space probe to Saturn revealed the very spectacular radial lines across the belts and the equally mysterious twisted and braided outer belt. These things scientists have now confessed are in defiance of all the known laws of celestial mechanics, and beyond their understanding. Sort of makes you wonder if they really have a firm grip on

what they think they know, and also how much more they are not understanding, in light of this discovery.

So when scientists tell you there is no free lunch and that free energy is against all the knownlaws of thermodynamics - can we afford to believe them? That very argument, "against all the known laws of themodynamics", was used in an article in the November 1980 issue of Science 80, put out by the prestigious American Association for the Advancement of Science. It is surprising that such an organization as the AAAS would want to be associated with such an obvious hatchet job.

The article claims that all perpetual motionists challenge the first two laws of thermodynamics. Our esteemed scientists of the AAAS should know better. Thermodynamics has to do with heat energy. Not all free energy devices are concerned with heat energy. Certainly permanent magnet motors are not, and yet they not only make such erroneous claims about the Howard Johnson motor, but also claim no working model exists when it has been well reported that two crude working models were presented to the patent office - both a linear model and a rotary model.

Their criticizm of the Johnson motor and the Stewart invention might have had some merit were it not for one very important point which was not even mentioned. And that is that the patent office does not issue patents on perpetual motion machines nor does it even look at devices which contradict the laws of science. The article also discussed a machine which had received a patent and was "proven" to have been a fraud, as tho that one fraud or an number of them somehow disproved the whole idea of free energy. After all, we have had fraud and corruption even in the whitehouse, so are we to throw the baby out with the bathwater because not everyone is honest?

This attitude of skepticism and derision among scientists and the news media is of course nothing new. But it's pervasiveness is such that it is difficult not to believe there is an organized effort to suppress all serious investigation of free energy other than the more obvious solar or wind energy. We've all seen stories in the papers and on television about free energy devices. But have you noticed that in most every case the story is short, and presented in a tongue in cheek fashion? It seems to be a matter of policy that no serious reporting of such things is allowed. In fact it seems to be standard proceedure to present such inventions so as to convince people that the manner in which the so called reporting is done is deserved.

A conspiracy? Is it possible? A little analysis and common sense seems to be in order. We are just going to have to face the reality that if free energy is allowed there are those who stand to lose trillions the might otherwise have made over the years. Knowing the standard of morality the kind of money involved here promotes, we have to understand that in their opinion anything and everything possible will be done, indeed must be done, to suppress free energy. The fact that people in the energy industry would say that giving people free energy would be like giving an idiot child a loaded submachine gun only shows too well what kind of immoral attitude we're up against.

Would it be too far fetched do you think, knowing the corruption that has been exposed in recent years and in fact has been exposed throughout history, and continues to be exposed (watergate, koreagate, abscam) to assume that those who stand to profit from a situation such as the energy crisis, might not also have a hand in creating the very situations by which they profit? Isn't it only logical to expect the suppression of anything that could destroy their empire?

After all, if you had a goose that laid golden eggs, would you want to see it destroyed? And wouldn't you also do everything you could to see to it that conditions were always just right for that goose to lay as many golden eggs as possible?

Is it too far removed from common sense then to assume that, altho we would all very much like to believe otherwise, that no-one has much chance of gaining serious attention for a free energy invention (much less market one) when such an invention could obsolete every last one of our energy industries? Not much chance that is unless the possibilities for free energy become common knowledge. Again, it is our own ignorance which is at the core of the problem. Could it be we are uninformed because those who could lose so much are in control of our news media, our public schools, colleges and universities, in fact all our major sources of information?

ATTACHMENT

Section D - Summary

Highlight - Full page.

FACT: Everett C. Young was nominated for an honorary degree at Arizona State University because of his significant contributions to our National Space program. He claims the government confiscated his design for the heat shield on the Apollo and Gemini Space Crafts.

QUESTION:

If the Patent Office gave his application to NASA as he claims, why wasn't he reimbursed financially and given recognition? Who gives the Patent Office such latitude? In times of war the conditions are different than in peace time, so under what premise was this confiscated - if Young's statement is accurate? Theft is theft.

FACT: I have a new and useful invention ready to send to the Patent Office. This complete package with drawings has been ready for over a year. I have not sent it in for fear of losing it to the government and being gagged and fined.

QUESTION:

Why hasn't the government openly published a list of inventions that are considered material that is open to confiscation? Why the underhanded way?

1975

'Inventor' of spacecraft heat shield

E.J. Montini
Republic Columnist

Everett C. Young, self-proclaimed "designer of the Apollos," is scheduled to appear this morning before U.S. District Judge Earl Carroll to argue on his own behalf in a lawsuit against the U.S. government and the National Aeronautics and Space Administration.

Young says that NASA stole his designs for a heat shield that was used on 28 Apollo and 13 Gemini missions. Since heat shields were vital to the success of the nation's space program, Young believes he is owed a percentage of the profits of the $28 billion aerospace industry.

He isn't greedy. He wants only about $500 million. He says he will use the money to build his own space shuttle, one that is cheaper and safer than NASA's.

If that hurts the space program, well, Young believes it deserves it.

"You know," Young tells me, "when you do something as great as I did, you'd think that people would worship the ground I walk on. But I think whenever you do something that is tremendous in advancing the state of the art, either philosophically or educationally or scientifically, like I did, you have to suffer for it."

Young is a man of late middle age. He fancies wide lapels and wide ties and narrow-brimmed hats, and looks like a benevolent version of Paul "Bear" Bryant.

The day he and I meet, Young carries with him a footlocker-size cardboard box in which he has a model of his space shuttle; a briefcase stuffed several inches thick with legal transcripts; an equal amount of legal documents and other papers loosely bound by rubber bands and tucked under an arm; and a selection of homemade posters Young uses to try to convince anyone around of his plight, which he describes as "how our nation gained the moon but lost its soul."

Young filed a patent-infringement case against NASA in 1969, alleging that NASA used heat-shield designs that he created in the early 1960s and had submitted to NASA officials.

"They turned my designs down, then went ahead and stole them," he says. "It was a case of insane jealousy. They don't want to pay me because they don't want the world to know that here comes a guy in the early '60s with a BA in industrial design who never had any background in aerodynamics or heat-shield research and he came in there and showed them how in hell to do that."

Young lost the patent trial, and he lost the appeal. Now he is taking the case to U.S. District Court.

is fighting for recognition, cash

"They were being paid hundreds of millions of dollars at NASA," Young says. "It would have embarrassed them to admit that I was right."

Young had telephoned me a few days earlier and asked if we could get together. He told me that his story would make any reporter interested in it bigger than "Woodsen and Bernstein from Watergate."

"In fact," he said, "this is BIGGER than Watergate."

On the average, I receive about five calls a week concerning stories bigger than Watergate. None has made me as famous as Woodsen or what's his name. Nevertheless, I checked for references to Young in *The Republic's* clipping files.

It seems that in 1985, the Arizona Senate named Young one of three recipients of the "Spirit of Arizona" award, which "honors those who exemplify the spirit that makes Arizona a great state." Young was selected for what the senators called his "contributions to the space program," contributions that NASA says don't exist.

Young wrote and has printed several hundred copies of a book he titled *History's Greatest Epochal Lie*. It is about how NASA supposedly stole his heat-shield design.

The book is a hodgepodge of mimeographed sheets outlining Young's contentions. I could not understand it.

Young says I lack the technical expertise. Perhaps

Young has a letter from Dr. Charles O'Bannon of Arizona State University's civil-engineering faculty stating, "Young has made a truly significant contribution to our national space program. Without his work, our successful landing on the moon would have been impossible."

O'Bannon nominated Young for an honorary degree from the university, which was turned down. Another fellow went so far as to nominate Young for the Nobel Peace Prize. Unfortunately, he mailed the nomination to the wrong address.

Over the years, Young has written to senators, congressmen, astronauts and others about his situation. He has a letter from astronaut Sally Ride that reads in part, "Your contribution to space flight during the Apollo Space Program was highly significant."

"She knows I did it," he says. "Everyone knows I did it. Yet I've had to spend $30,000 of my own money only to have the government write its own verdict against me. That's what happened, you know. They can't afford to let me win."

Young says his trouble with the space program has destroyed his family life and frustrated him professionally.

He is now studying for an advanced degree in education at ASU.

If he does not win his case, he will go into teaching, which he says he enjoys and is good at.

If Young wins the case, as only he believes

1976

Letter From Gerald J. Orlowski and Associates

April 4, 1988

Senator Sam Nunn
United States Senate
Committee on Armed Services
Washington, DC 205 10-6050

Dear Senator Nunn:

In regards to your letter of March 14, 1988, it was very reassuring to know that the work on the development of our lift principle space craft might be allowed to come to fruition within the U.S. If the full Senate does consider legislation which will lift the gag order ban on space related subjects, please let them know we are positioned to advance the U.S. in space travel without any government funding.

The Space act of 1958 outlined the policy of that Congress which was that activities in space should be devoted to peaceful purposes for the benefit of all humankind, however the S.D.I. project inspired a change to this freedom of the 1958 space act. We at E.A.I. must be assured that our lift principle space craft will not be confiscated by the Defense Department which would then go completely against the Congress that originally voted for freedom in space.

My reason for writing at this time is to offer my services as a guest speaker during the full Senate hearing when they meet on this subject. My proposed speech would be short, quickly covering my early years as a machine inventor having more than a dozen patents. Next, would be a quick history of the past visionaries of the lift principle crafts. And finally, detail on how our lift principle space craft will lift off the planet Earth without the use of thrust. Do not be concerned about my success as a public speaker because I enjoy sharing with people. Our local college voted me as the best guest speaker of the year for my speeches on how to patent and market an idea.

It was good to hear from you and I anxiously await news of your progress on this issue. I am enclosing letters relating to this subject.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski and Associates

1977

Letter From Gerald J. Orlowski and Associates

April 4, 1988

National Aeronautics and Space Administration
600 Independence Avenue SW
Washington, DC 20546

Attention: James C. Fletcher, Administrator

Dear Mr. Fletcher:

Referring to an article in the Arizona Republic, February 12, 1988, you were quoted in part as stating that, "(the new policy) has recharged the nation's space program by giving it new momentum and the prospects of new challenges and new opportunities".

The new challenges should be an intensive investigation into the work accomplished by the space visionaries who did extensive work on the lift principle which lifts a craft off the planet Earth without thrust. Enclosed is information which will give you insight about this great work which has already been accomplished. We will never advance in space travel until we utilize the lift principle.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski and Associates

1978

Letter From Gerald J. Orlowski and Associates

February 22, 1988

Dear Editor:

Recently on television, President Reagan was quoted as saying that he wants civilian money invested in space application. What hypocrisy, when the government has positioned itself to confiscate any of the work that might be accomplished. See copy of letter to the President. We desperately want to get involved, but we want to have the opportunity to capitalize on our investment.

Enclosed is a copy of a letter sent to Carl Sagan which answers a question he asked of us in the Feburary 7, 1988 Parade Magazine. The question was, "What will it take to free us from the deadly trap that we have set for ourselves?"

The trap he should be speaking about is the control of the mind and this feat is even more astonishing in that it has been accomplished within a nation that professes to have freedom of the press.

The enclosed letter is an accurate appraisal of why the planet earth has problems that seem insurmountable. Will your readers see this response letter in print to shed light on this darkened state that is now called illumination? Excuses would, at this late date sound hollow when our very survival is at stake. Has the last line of defense already been breached and the printed word now become self serving instead of serving the people?

My responsibility has been accomplished by doing the needed soul searching and research required to write this letter. Will you read the enclosed letter with an open mind and do some soul searching of your own? How is it possible that information of this caliber could have been kept secret for this long a time without the full cooperation of the press? The time for making amends is long overdue. Our survival is at stake. What catastrophic event will it take to awaken closed minds?

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski and Associates

Enclosures

P.S. You have permission to print the enclosed letter to Carl Sagan in its entirety.

1979

LETTER FROM GERALD J. ORLOWSKI

November 27, 1987

Professor Sherwood Rowland
University of California
Irvine, California

Dear Professor Rowland:

In a letter sent to me as a response to my letter of November 8, 1987, there was an indication of your desire to cut off any further communication. This is agreeable with me, however let me state that your erroneous evaluation of the cause for the ozone hole will kill off my children and grandchildren if new light is not brought to bear on this problem.

Proof that your damaging information is having effect can be seen by the latest newspaper report stating six U.S. senators are urging the United Nations to convene international meetings to ban chemicals, primarily CFC's.

For years scientists have had and continue to have theories which are mental boundries preventing any accurate evaluation of existing problems. Prior to problems with the ozone there have been problems with air pollution, radioactive waste that circles our earth, contamination of our oceans which deplete our food resources, oil spills that have yet to be controlled and on and on and on the list grows. The point here is that there is no simple formula or solution because the multiple factors that create varying conditions (the ozone being just one) are interdependent and trying to resolve the ozone problem with a ban on chemicals although commendable does almost nothing. By the time that nothing is complete, our world will be heading toward greater annihilation.

Let's explore at least the interdependence of all systems. When new discoveries are made new names are given and scientists somehow or other get locked into the name and in so doing defeat any further progress because it is assumed that the discovery is finished. Intelligence alone should tell one that a discovery is not a finish but a beginning. Lets look at how the word gravity affects us negatively by locking us into what we think it means. (No, the subject hasn't changed, it's merely a part of the whole.) There is an inseparable connection between what we now call gravity and the weather here on earth. (No, it isn't out of line, just flow with it for a minute.) By reviewing the action of the barometer this connection is explained thusly. When a barometer shows activity we say the weather is changing, but is the weather the cause of the barometer's movement? No, it is not.

There is a molecular structure, just outside the earth's rim that reads: $C - 2 + 14^2 = 710Y + 409$. Y is the combustible factor of the elements. These elements are a combination of earth, air, sound, speed and light. In order for an energy to operate it has to exist within these elements. It is important to note that light is not the major factor here. The weather has nothing to do with what is called 'atmospheric conditions', but is caused by a particle (see formula) that is outside the earth's atmosphere but within reach. Since this particle has to do with equal existing conditions within the earth's atmosphere, it needs a work arm or force to carry out its commands. This

force now is identified as gravity and that evaluation is the mental boundry. Gravity is not a giant magnet in the earth pulling everything downward, gravity is compressed magnetism. This is explained as a large amount of magnetic energy that is put into a small amount of space. That small amount of space should be viewed and compared as the earth in relationship to the universe. This compressed magnetism within the earth changes continually its compression ever so slightly because of the particle balance system just outside the earth's rim.

It's vital that this balance system be kept in tact.

When weather conditions are normal we can view this compressed magnetism as being neutral (if you will) and when science learns how to capture this energy they will find it manifests in just this manner, without a polarity. When the particles outside the rim sense a change is needed (for instance more rain to a given portion of earth's atmosphere), it produces a higher intensity of magnetism and causes a slight, charge if you will, to be given this neutral magnetism. This in turn becomes a conduit of exchange. We see therefore the compressed magnetism we now call gravity, has far more importance than just holding things to the earth. In viewing this magnetic energy as a name called gravity we limit its function as to how it can function and lose its vast amount of value.

Our earth system is so finely tuned and balanced, yet scientists fail to see why this hole in our envelope of protection is not just a depletion of the ozone. The balance of all systems can no longer be overlooked. It is in fact a definite breach to the systems controlling our weather and if it continues to enlarge, not only drastic weather changes will happen as the system attempts to compensate, but the compensation itself will eventually become unbalanced which will result in continuous upheaval of the elements. Now perhaps one can see that fixing the blame on CFC's becomes as destructive as the bomb itself. Everything man sends up into his envelope of protection has a damaging effect. Even that which you say is destroyed in the atmosphere becomes a part of a particle balance. The sad thing is that the most useful energy man now uses is also one of the most destructive - electricity. For all its value, electricity is the primary cause for the fragmenting of the ozone layer. Scientists must begin to investigate the core structure of the electron and in so doing they will find this electron energy is extracted primarily from the earth's rim (our protective layer).

The answer is for the leadership in charge to recognize and then allow magnetic energy to take its rightful place to ensure our future. Magnetic energy is a flow of energy in energy and will not contribute to the ozone layer depletion. Scientists must open their minds and not assume an attitude of, "well good, we agree, the problem is CFC's". Science must keep searching because the Source of all truth which lives within man desires to communicate the knowledge needed to save his Planet.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

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P.S. This letter is being copied and sent worldwide.

1981

LETTER FROM GERALD J. ORLOWSKI

December 7, 1987

Ahmed H. Zewail
California Institute of Technology
Pasadena, California

Dear Dr. Zewail:

Referring to an article in the Arizona Republic, December 4, 1987, you were quoted in part as stating that, "For the first time we are able to see the birth of new molecules". This is a wonderful achievement but as with all great new discoveries one must treat these accomplishments as new beginnings, therefore we must ask, what new ventures might be planned for these molecule viewing technologies?

You observed the bonding of carbon dioxide and hydrogen iodide, now the next set of elements should be a combination that releases useful energy. A worthwhile selection could be gallium and deuterium because when these blend they form a new molecule and in the process release useful energy. Quickly you will find that using a small metal chamber and not pulling a vacuum will allow the resulting energy to exit out of an escape port where it can be put to useful work.

But what kind of energy would it be? How can it be made to do something? Using proper testing equipment you may find this new non-radioactive energy can be captured and held by permanent magnets thus magnifying their magnetic field.

With a little hard work you might find these magnets can be spaced around a laminated metal rotor and the energy being held by the magnets would impregnate directly into the rotor coils thus setting up magnetic poles to drive the rotor. Almost immediately you may discover, after burning out your rotors, that a much smaller metal chamber with less particle activity is needed (fuel cell if you will). Finally the metal chamber size reduction will result in a fuel cell small enough to fit in the palm of your hand, whereby a magnified spark sent through a diffraction prism would supply the needed heat and light to form the new particle. This power source would simply be focused into a <u>pin point</u> zone where the two chemicals would be very slowly fed together with the volume timed according to the rotor speed, thus becoming the rotor's horsepower control system.

If someone designed and built this kind of motor, would scientists award him some recognition? The sad answer is <u>no</u> because he would be stepping over the line between searching for that, "which make us and form the world around us," to putting science to a practical application that interferes with the oil and power companies that now control our congress.

The enclosed information shows that the story as stated is almost exactly what happened to physicist Rory Johnson in the late 70's. He spent 13 years and 7 million dollars of his own money to construct the motor as described herein. When he displayed it for television, our government quickly put him out of business. He demonstrated the motor powering a car, performing equally as well as any gasoline engine in a standard sedan.

Scientists that <u>watched the motor running</u>, stated it could not work because it went against all their laws of physics. To

quote Einstein, "Great spirits have always encountered violent opposition from mediocre minds." Error is comfortable, but our very survival rests on disrupting this comfort and coming out of this darkened state that we call illumination.

Now the latest news is that our government wants to power the star wars units with motors that use radioactive material which could come falling down on us (Russia's already did on Canada), and it is our government's gag order policy that stopped Rory Johnson's motor from being used. The Johnson motor has no pollution, no exhaust, no radiation.

Undoubtedly this heavy weight to Rory Johnson's spirit, being rejected by his colleagues and being shut down by our government contributed to his heart condition. He died while still a strong robust man in his early 50's. For his family's sake, we pray that one day his work will be given proper recognition, and he be named as one of the great physicists of our time.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI

July 17, 1987

John Billingham
Ames Research Center
Life Science Division
Moffet Field, California 94035

Dear Mr. Billingham:

In the Sunday edition of the Arizona Republic, July 12, 1987, there appeared a reprint from a Washington Post article in which you were quoted in part as saying that you do not understand the mechanism underlying all the changes to the body when in a weightless state in space. This letter is written with the object of giving you a renewed hope through a sincere appraisal from this point of view as to why there are problems in reproducing the same effects of weightlessness in ground experiments. Hopefully through this letter it will be seen that our interests in this are working toward the same goal and vision, which is to successfully travel in space with a limited amount of hazard for all concerned.

In one area of my work there has been a focus in designing a craft that will enable it to lift off this planet using a lift principle as opposed to thrust. I am reexploring a principle that at one time was clearly understood, but was put aside in favor of the thrust position, (mainly because of Russia's influence). I have come to understand that in order to successfully entertain space travel for any length of time we must redefine our thoughts on the subject of gravity.

Perhaps as a beginning point we must achieve the proper frame of mind and assess gravity in a different light because gravity has come to be known as a giant magnet in the earth that pulls everything to it. Everyone has proceeded from this point, right? Wrong! The mind of tomorrow must be freed of the thinking shackles of today and we must develop an understanding that new theories do not diminish the old but are merely a progression of enlightened thought. What if we were to view gravity as compressed magnetism? (No, it isn't out of line, just flow with it for a minute.) We have become locked into the idea that magnetism somehow depletes itself, but if we begin to view magnetism as a constant then we can expand our thinking to not only utilize this magnificant untapped resource but to evaluate just how necessary it is in helping us to maintain life itself.

The problem with reproducing the effects of weightlessness on the ground is that compressed magnetism (gravity) continues to influence the subject that is under test. We must begin to view magnetism as a life support system. There is within each of us a certain magnetic energy that creates a draw factor to our atmosphere. In this way compressed magnetism (gravity) constantly replenishes our own magnetic system keeping it in a perfect balance with the atmosphere. When a space pilot is put into orbit a chain of events takes place within the molecular body structure. First of all, the body has a resistance to the compressed magnetism of space because it is not compatible to that environment. After an extended stay in space the body is expected to adjust to a condition which has a diluting effect rather than a sustaining one to his whole body structure. We need to begin to understand that magnetic properties within our body are gradually broken down through the absence of a compatible holding together, if you will. What is absent in space is not gravity but a lack of compressed magnetism that interacts with the human body while within the earth realm. The space environment becomes hostile and in turn a molecular change takes place, and the body starts this destructive process. This process manifests itself in the body's inability to retain a necessary oxygen level. It is the magnetic qualities within the body structure that need to be examined in detail. What are the differences in the magnetic structure within the blood?

If the intentions are to accurately reproduce the same weightless effects as in space, in an earth atmosphere, a method for intercepting the magnetic particles (called gravity) must be constructed.

In our development work we too are facing the question as to how to properly construct a weightless environment that will in all ways be compatible for space travel. As we grow in knowledge of how magnetism can best be used we most certainly will achieve the balance needed.

It would seem that persons of like interest must start joining forces and with a pooling of their talents seek to resolve the problems in question.

We must stop viewing magnetic energy as something that is confined to a piece of metal. It would be helpful however if we can begin to think of magnetism as having a pulse rate, then we can open a closed door and explore. An intertwining of magnetic circuitry produces the ability to monitor what is called a pulse rate. It is important that we keep semantics from getting in the way when thinking "pulse rate". Example: Pulse - beep, blip, etc. Our whole atmosphere is magnetically charged and

without going too far afield, even in the stretch of our imagination, if U.F.O.'s are a possibility, we can almost be certain they are not dependent on fuel. There are no fuel gas stations in the sky! The reality for us is that we have refused to allow any thinking outside our rigid structure of thought to take hold and help us when we are so desperately in need. It should not be necessary to fight space but rather develop a healthy integration. The same magnetism that can be extracted for space travel can also be extracted to create the needed on-board gravity field which will keep the balance needed in the human body.

The unlocking of our minds must continue to include the following understanding. The sun is a constant, the light from it is therefore a constant. We need to think of magnetism in the same way, as a constant.

I would be delighted tc further this communication with you and to have an opportunity to discuss new possibilities for mankind.

Sincerely

Gerald J. Orlowski

Gerald J. Orlowski

LETTER FROM GERALD J. ORLOWSKI

July 10, 1987

Professor Thomas M. Donahue
University of Michigan
Ann Arbor, Michigan

Dear Professor Donahue:

In the Sunday edition of the Arizona Republic, July 5th, 1987, there appeared a reprint from a New York Times article in which you were quoted in part as saying that the future looks bleak for American space science. This letter is written with the hope of giving you a renewal of spirit through a sincere appraisal from this point of view as to how this negative situation came about. We, as Americans, must ask ourselves whether or not we have made the <u>right</u> choice in our selection of an energy source for space travel?

Over thirty years ago, there were visionaries who, like space scientists today did extensive work and had outstanding successes in proving that a craft could lift off the planet Earth. How they saw it lifting is the subject matter and one that must be reviewed if we are to maintain an effective space program. It isn't thrust with its limitations and disadvantages - it's <u>lift</u> with an understanding of what <u>lift</u> really is. This principle is not a new one and in fact was at one time explored quite effectively, but as always because our thinking becomes trapped into what sounds good rather than what is ultimately effective, this principle was put aside for no other reason than man refusing to stretch his thinking process.

1985

In spending a great deal of time studying many aspects of the energy and space field, a multitude of reports came into my hands which showed that this lift principle did in fact work. It was in reading these articles that I began to wonder why they have been shelved when the end result of research progression in this area could be absolutely awesome. A translation of a twenty year old French patent #1,253,902 by Marcel-Jean-Joseph Pages shows that nations other than the U.S. had been exploring this lift principle. All nations today know that one of the major deterrents in space exploration is fuel consumption and no matter how it is figured, if this planet is to survive we must seek an energy source that will not kill us off in our reach for space. Human life is not expendable and neither is our Planet.

When an inventor seeks to bring forth a new idea, it is a standard operating procedure to take a vision which is a dream and find a way to turn it into a functioning reality. Thankfully we are not left to our own stagnant way but are pushed within our minds to expand in order to advance our potential which is without limit. That being said, where do we start developing an understanding of this lift principle?

Perhaps as a beginning point we must gain the proper frame of mind and assess gravity in a different light. Gravity has come to be known as a giant magnet in the earth that pulls everything to it, and everyone knows that, right? Wrong! The mind of tomorrow must be freed of the thinking shackles of today. What if we were to view gravity as compressed magnetism? (No, it isn't out of line, just flow with it for a minute.) We have become locked into the idea that magnetism somehow depletes itself, but if we begin to view magnetism as a constant then we can expand our thinking and seek to capture and utilize this magnificant untapped resource.

Scientists who work in the space laboratories must begin to seek a way to put a ship into orbit by using the magnetic energy that is freely available to them. They must begin to think of building ships without thrust, and the lift principle when combined with other elements involved will certainly achieve this.

For instance, just for the sake of expanded thinking - what if a space ship were to be designed in such a manner so as to welcome magnetic energy. We must stop viewing magnetic energy as something that is confined to a piece of metal. Our whole atmosphere is magnetically charged and without going too far afield if even in the stretch of our imagination U.F.O.'s are a possibility, we can almost be certain they are not dependent on fuel. There are no fuel gas stations in the sky! The reality for us is that we have refused to allow any thinking outside our rigid structure of thought to take hold and help us when we are so desperately in need.

I have had the wonderful luxury of spending hours on developing and understanding how to work with magnetic energy so as to bring to pass a workable reality from what started as a dream. An electro magnetic piston driven by magnetism is now in the process of development and in fact almost complete.

There is no way a letter can say it or explain it all, but I would be most happy to discuss further the knowledge that has come about throught the grace of God that will further mankind's effort to explore the universe of which he is a part.

The unlocking of our minds must continue to include the following understanding. The sun is a constant, the light from it is therefore a constant. We need to think of magnetism in the same way, as a constant.

Perhaps you would care to assign a workshop to new young scientists for the purpose of investigating the long lost lift principle of thirty years ago. Hopefully you can see that both of us are working toward the same goal and vision, which is to offer young visionaries an opportunity to explore the unlimited possibilities of the future, and for ourselves the opening of new doors of understanding will show that depletion is only in the mind of man.

I would be delighted to further this communication with you and to have an opportunity to discuss new possibilities.

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski

1987

Letter From Gerald J. Orlowski and Associates

February 19, 1988

Society of Mining Engineers, Inc.
Caller No. D
Littleton, CO 80127

Attention: Claude L. Crowley, Director

Dear Sir:

In reference to an article in the Arizona Republic, February 7, 1988, Robert Schiffman, representing your society during your annual meeting, stated that, "a space plane will cost $2 billion". He further stated, "If you could reduce its weight by a third, you would enormously increase the payload". He further indicated that this research work could only be done where there is no gravity. Enclosed is a metal melting process that Kaiser Aluminum uses, a Soviet technique which has no crucible to contaminate the molten metal, proving that using non-gravity techniques are not necessary.

We offer the following for your consideration. Enclosed is a patent we received on TialCo-B, a metal our company developed. TiAlCo-B needs none of the 'requirements' stated by Mr. Schiffman to formulate it. TiAlCo-B when properly blended is "space ship metal".

There <u>are</u> exacting requirements to correctly pour TiAlco-B metal, however these <u>requirements themselves</u> will not be understood unless metallurgists are willing to expand their understanding of exactly what transpires in the nuclear energy field as it relates to metals. For example, the acceleration of the nuclear sub-atomic parts creates a structure of mobility for other structures whereby they can be contained and utilized once they are harnessed in a proper manner. Thereby we see that nuclear energy has a structural balance. The magnetic field is not unlike this same structure. For years scientists have thought that to harness magnetism in any form other than magnetic embodiment in a particular element was the only way but time will soon show that there are magnetisms in the atmosphere that have only been minutely touched. It is metallurgists and scientists limited knowledge that has yet to capitalize on this science. So it is that structural polarities exist in all things and in all differing measure. This is one of the reasons why when metals melt and some adhere and others escape to no purpose that adds to the final product thus creating varying degrees of tensil strength. Please tell Mr. Schiffman that it is not so much the purity level that strengthens but the mannner in which things are melted in order of chemical importance not degrees. The time factor is critical when speaking about melting in order of chemical importance.

If you are interested in working with us and learning more about our TiAlCo-B metal, please contact us.

We are enclosing additional information pertaining to the subject matter and a copy of our patent.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski and Associates

1988

LETTER FROM GERALD J. ORLOWSKI

September 1, 1987

Estelle Condon
N.A.S.A. Goddard Space Flight Center
Greenbelt, MD

Dear Ms. Condon:

In reference to an article in the Arizona Republic August 29, 1987, it was stated that you are actively involved in the study of the ozone hole. The article stated that aircraft were guided to a flight path where the ozone gas is at its lowest concentration. Also stated was the reason for this being done, which is to establish whether or not the hole is manmade or a natural phenomena. In reading this article the question came to mind, "What has happened to the molecular structure within the layers to create a disturbance great enough to produce this hole?" The next logical question in sequence then became, "In all of the searching, are they negating that the structures they're concerned with are of magnetic quality?"

It becomes evident from the article that the presently held theories are directing choice of instruments being used and are in no way concerned with tracking a magnetic field but concern themselves only in the area of gases. Why is it Ms. Condon, that there is an insistance that it must have to do with only gases? Are we so limited in our thought process? The very thought that manmade chemicals is the answer leads in a direction that is going to meet a dead end.

There needs to be an understanding that just as molecular structures in the body break down and cause disease, and if not corrected, death, so the molecular structures protecting our earth can be broken down and begin a process of destruction. Because science has so concentrated on the structure of the ozone layers as to their gaseous content they have overlooked any other contributing structures which I suggest has to do with a magnetic circuit. Magnetism and its uses and effects may not be able to be bottled, seen, and distributed but it is not because it doesn't have an important place in the scheme of the universe but because we continually shove it aside and refuse to recognize and study its ultimate impact on our system as a whole.

Molecular structures break down for a reason, not by chance. It is a process of continuous combustion that brings this about. The first order of business is to find a means to identify the activities which cause this combustion. This combustive action can then be reviewed. In order to achieve this, related instruments must be designed for the specific purpose of tracking magnetic current and its pulse. (Explained further in this letter.) A simplified explanation of this device would be to suggest an instrument that would perhaps send out a magnetic pulse at a given rate. This pulse would then be returned to a unit on an attract field which would give a monitoring ability that will eventually produce a pattern for observation. In order to understand the term "pulse" in relationship to magnetism a brief explanation is in order as follows.

A review of the worldwide use of electricity and its effects is imperative. To begin this review, the word 'electron' must be

re-evaluated. Because science locks itself in with the use of words and theories, possibilities are overlooked. It is vitally important to understand that the electron is not just an entity unto itself but has an identifiable core structure of its own. For instance, there is nothing wrong in stating that an electrical generator has a flow of electrons that goes through the conductor. The question is not that electrons flow but what is the generating source of this flow? There is no question as to the word electron or any dispute of what the assumption is, but to have theoretical assumptions that lock themselves into a dead end presents a definite issue. The failure to explore the possibility of a molecular structure within the electron is the barrier that must be broken. Barriers began in the mind and remain there until consciousness is ready to expand. As we know, everything we have within the earth's system needs to maintain a balance and it is when this balance is disturbed that it has a domino effect that at this time may be a subtle one but in the future could be a major catastrophe. The concern as to whether the break is manmade or natural will be answered more accurately if those within the field of science would examine with seriousness the molecular structure of the electron without being so sure that no such thing exists and all the answers have already been arrived at. Instead of assuming the electrons simply flow through the conductor within the generator, there must be an understanding that these conductors have positive and negative particles that simply form a molecular system of exchange in such a manner as to create a new particle flow. The conductor should be viewed simply as a point of transference.

Electricity for all its value has created a condition that has become a primary cause of the molecular structures within the ozone layer becoming fragmented. We cannot consistently batter the ozone layers with thrust from a stream of rocket and jet engines and expect there to be a continuing protection of our planet. Until science begins to concern itself as to how we weaken and then breakdown this protective ring there can be no hope of finding an answer. As stated, the result is a domino effect and we can not escape it.

How scientists can so blind themselves as to think that by shunting it off to the fluorocarbons they'll have an answer, is more destructive than the bomb itself. Ignorance always is. It is foolhardy to put the emphasis in an area that is at maximum a minute contributing factor.

Theories must allow for correction and expand in order to gain an overview of the total picture, and to get a firm grasp on the magnitude of the problem. Theories are only as good as the positive results they produce. One of the problem areas is that science tends to look at atmospheric energy and all isolated particles as being inter-related when in fact magnetic particles are separate but within the same generating force. The magnetism within the earth's atmosphere has nothing to do with what is called atmospheric conditions (including the hole) but is directly related to that flow outside the atmosphere but within reach. There is with the atmosphere just outside the earth's rim (ozone layer) conductive particles that have to do with equal existing conditions within the interior atmosphere of the earth and any study of this ozone hole must take into account these factors.

Nature has always been able to deal with cause and effect in a natural process and if we will stop the unnatural process of manmade destruction, the earth will go through a normal mending process and close the hole.

I am not suggesting that space exploration be cancelled, however if science ever get to the point of seeing their error in discounting the lift principle for space exploration, we may just have a chance. Mankind, no matter how good his intentions or how far his visions, has never learned how to live in cooperation with his own environment and until he does he will never be able to explore the universe because condition after condition will present itself.

The arrogance of progressive thought has always been willing to sacrifice for the sake of expediency but now has come face to face with the result. The hole is only the beginning. Without corrective changes being made, the hole will continue to enlarge until there is nothing. We have a habit of not concerning ourselves with a few hundred years down the road of time and here we are with a break in the ozone. The hope for future survival has to do with the development and use of magnetic energy.

Because of an arrogance in science, visionaries seeing magnetic energy for the future have been ignored. The world of magnetic energy is not just an idea from a handful of "wierdo's". It is as valid as the wierdo's of yesterday, the Wright Brothers, Alexander Graham Bell, Benjamin Franklin, etc. When a man named Felix Ehrenhaft of Vienna showed flowing magnetic current it should have been further explored. When it happened with Nikola Tesla, Henry Moray, Rory Johnson, Gray, etc., (see list), it should have been explored. At that particular time we had not had the condition of vast electrical consumption and it was an ideal time to begin the exploration of other energy possibilities.

I am enclosing other information that should be of interest to you. You are doing a very important work and I pray God's wisdon for you in this undertaking.

Sincerely,

Gerald J. Orlowski

Gerald J. Orlowski

1991

LETTER FROM GERALD J. ORLOWSKI

July 21, 1987

Mr. D. J. Shapland
European Space Agency
8-10 Rue Mario Nikis
F-75738 Paris CEDEX 15
France

Dear Mr. Shapland:

In a past Sunday edition of the Arizona Republic, January 18, 1987, there appeared a reprint from an Associated Press article in which you were quoted in part as saying the European Space Agency is now a recognized space power. The article shows your primary interest is in building space stations. With this interest I am sure there is great concern with what happens to the body in so far as its mechanisms as well as changes produced when in a weightless condition for any length of time.

This letter is written with sincere hope that another point of view will lead to exploring a new understanding as to why there are problems in reproducing the same effects of weightlessness in ground experiments.

Although our fields differ they are nonetheless compatible in having a vision and working towards developments which will lead to successful travel in space with a limited amount of hazard for all concerned.

In one area of my work there has been a focus in designing a craft that will enable it to lift off this planet using a lift principle as opposed to thrust. I am re-exploring a principle that at one time was clearly understood, but was put aside in favor of the thrust position, (mainly because of Russia's influence).

Some years ago there was another international group of visionaries from all fields who pooled their mental resources and developed this lift principle and perhaps there would be a benefit in reviewing what they had to say. Certainly the very greatest of achievements had forefathers of thought who for one reason or another did not see the fruition of their knowledge in visible form. Everything has a timing. (See list on last page.) I have come to understand that in order to successfully entertain space travel for any length of time we must re-evaluate our thoughts on the subject of gravity.

Perhaps as a beginning point we must achieve the proper frame of mind and assess gravity in a different light because gravity has come to be known as a giant magnet in the earth that pulls everything to it. Everyone has proceeded from this point, right? Wrong! The mind of tomorrow must be freed of the thinking shackles of today and we must develop an understanding that new theories do not diminish the old but are merely a progression of enlightened thought. What if we were to view gravity as compressed magnetism? (No, it isn't out of line, just flow with it for a minute.) We have become locked into the idea that magnetism somehow depletes itself, but if we begin to view magnetism as a constant then we can expand our thinking to not only utilize this magnificant untapped resource but to evaluate just how necessary it is in helping us to maintain life itself.

The problem with reproducing the effects of weightlessness on the ground is that compressed magnetism (gravity) continues to influence the subject that is under test. We must begin to view magnetism as a life support system. There is within each of us a certain magnetic energy that creates a draw factor to our atmosphere. In this way compressed magnetism (gravity) constantly replenishes our own magnetic system keeping it in a perfect balance with the atmosphere. When a space pilot is put into orbit a chain of events takes place within the molecular body structure. First of all, the body has a resistance to the compressed magnetism of space because it is not compatible to that environment. After an extended stay in space the body is expected to adjust to a condition which has a diluting effect rather than a sustaining one to his whole body structure. We need to begin to understand that magnetic properties within our body are gradually broken down through the absence of a compatible holding together, if you will. What is absent in space is not gravity but a lack of compressed magnetism that interacts with the human body while within the earth realm. The space environment becomes hostile and in turn a molecular change takes place, and the body starts this destructive process. This process manifests itself in the body's inability to retain a necessary oxygen level. It is the magnetic qualities within the body structure that need to be examined in detail. What are the differences in the magnetic structure within the blood?

If the intentions are to accurately reproduce the same weightless effects as in space, in an earth atmosphere, a method for intercepting the magnetic particles (called gravity) must be constructed.

In our development work we too are facing the question as to how to properly construct a weightless environment that will in all ways be compatible for space travel. As we grow in knowledge of how magnetism can best be used we most certainly will achieve the balance needed.

It would seem that persons of like interest must start joining forces and with a pooling of their talents seek to resolve the problems in question.

We must stop viewing magnetic energy as something that is confined to a piece of metal. It would be helpful however if we can begin to think of magnetism as having a pulse rate, then we can open a closed door and explore. An intertwining of magnetic circuitry produces the ability to monitor what is called a pulse rate. It is important that we keep semantics from getting in the way when thinking "pulse rate". Example: Pulse - beep, blip, etc. Our whole atmosphere is magnetically charged and without going too far afield, even in the stretch of our imagination, if U.F.O.'s are a possibility, we can almost be certain they are not dependent on fuel. There are no fuel gas stations in the sky! The reality for us is that we have refused to allow any thinking outside our rigid structure of thought to take hold and help us when we are so desperately in need. It should not be necessary to fight space but rather develop a healthy integration. The same magnetism that can be extracted for space travel can also be extracted to create the needed on-board gravity field which will keep the balance needed in the human body.

The unlocking of our minds must continue to include the following understanding. The sun is a constant, the light from it is therefore a constant. We need to think of magnetism in the same way, as a constant.

It would be my pleasure, if you so desire, to further this communication and to share ideas that might possibly lead to a blending and working together however that might benefit the overall picture.

Sincerely

Gerald J. Orlowski

Gerald J. Orlowski

P.S. For your information, if desired. (As per paragraph 2, page 1, some of those involved were:
Alan Holt
Charles F. Brush
T. Townsend Brown
Otis Carr
M. Pages
Dr. Russel
T.J.J. See
Nikola Tesla
Sinichi Seike
John Searl
H. C. Dudley
G. E. Hagen
A. P. Seversky
Etc.
We want to make special reference to Felix Ehrenhaft of Vienna

1994

Letter From Gerald J. Orlowski

November 8, 1987

Professor Sherwood Rowland
University of California
Irvine, California

Dear Professor Rowland:

In the Wednesday edition of the Scottsdale Progress (October 28, 1987) you were quoted in part as stating that even with a ban of C.F.C.'s the massive and increasing loss of ozone will exist for centuries. Will you please for the sake of our world review the following with an open mind allowing for the possibilities being overlooked. Our world is worth saving, is it not? How long will the scientific field be directed by an underlying fear of provoking the military as well as the oil companies with their vested control in the field of science? The survival of our earth is what we're concerned with. What survival will there be if we are part of a destructive pattern that will eventually leave no world to worry about.

In light of the fact that no natural particle flow travels from the troposphere through the stratosphere to reach the ionosphere, how can science blame C.F.C's? It is time for scientists to face some hard facts and admit they are deliberately being led to a haystack which is considered allowable because it offers no adverse interference in what is already set as acceptable.

Common sense tells anyone that phased into the overall equations must be the military's dumping of an estimated 150 million tons of radioactive material into our upper atmosphere. This fact must be coupled with the concerns past scientists have had regarding the polluting of our upper atmosphere by jet engines, rocket engines and nuclear explosions. Today, somehow these older wiser scientific voices have become mysteriously silent. The question is why? Who silenced them? Even the scientists who are directly involved in our welfare, employees of the E.P.A., are greatly suspect as to their stated good intentions.

In a news report of August 5, 1987, James Barnes, the E.P.A. Deputy Administrator, stated that the cancer causing radon gas results from the radioactive decay of uranium. To cover for the military and government, he then tried to fix the blame for this decay by mentioning natural causes. Did any scientists try to set the record straight by telling the news media that uranium left alone, untouched in the earth will not cause the uranium decay which is now producing radon gas? I saw no such news article. Nuclear waste dumps, nuclear power plants...not one word was mentioned. Also, with 150 million tons of radioactive waste circling our earth, surely someone could have at least mentioned these as possible sources of radon gas. Let's be honest, no one wants to face the fact that scientists worldwide are directly or indirectly covering up for the real culprits to this ozone and other worldwide deadly pollution problems.

There is nothing wrong with banning the production of C.F.C.'s because it will help clean up the troposphere, but since these particles never get up to the ionosphere, the ozone hole will continue to enlarge if C.F.C.'s are maintained as the scapegoat. More ozone holes will appear...this time in the northern

hemisphere. Will scientists then finally focus on the real cause?

Let's put fear aside for a moment and look at the haystack which is strictly off limits, the generating of electricity. Electricity which is our prime source of energy today must be reviewed as to its function in the coming years of growth. Visionaries have tried over and over without success to bring in a new field of energy because visionaries have had an understanding of what the future needs will entail. Electricity and its value to date nevertheless created a condition that has become a primary cause of the moelcular structure within the ozone layer becoming fragmented. With the birth of electricity man has ceased to see the need for another source of energy. He has beome complacent and refuses to see ahead and because of this refusal he is creating greater and greater problem areas to be resolved. Has science actually come to believe that electricity is the be-all answer?? Molecular structures break down for a reason, not by chance. Electrons do not just appear - they are drawn from the ozone layer. How? Just as a conductor inside of a generator is only a point of transference so too is the atmosphere a conductor of the electrons between the ozone layer and whatever is used to act as a generator. What is happening is a depletion and no redistribution. Granted, someone getting hit with this assessment of the problem must ask, how can a generator here on the earth have any effect on the ozone layer? The answer will sound ludricrous to a scientist who has theories which are mental boundries preventing the following assessment from being properly evaluated. Be that as it may, minds had better open.

Particles that travel to an electrical generator are not limited by the speed of light waves but travel as fast as light pulses which are approximately 4 times faster than light waves. When an electrical generator is driven, the source of electrons comes basically from the earth's rim, (ozone layer). The conductor within the generator must be viewed simply as a point of transference. The electrons are formed by a gathering of magnetic particles that form into an identifiable core structure for every electron. Unfortunately these magnetic particles were not just floating around waiting for a generator to start up but were in fact doing the valuable job of interacting and holding other particles together. Extracting these magnetic particles removes the glue from the combined molecular structures of like members, thus creating a fragmentation of ozone particles. Think of an electron as a grouping of neutrons. This is what the ozone layer is - not just gases. With this rim of pulsing neutrons being so vital to the earth's energy supply, contemplate for a moment on the destructiveness of the Star War's Defence Program which imagines that the government can explode nuclear rockets just inside this major energy supply source - and not be signing the death warrant for the planet Earth. In so doing there is a destructive particle transformation which will happen thus creating deadly gases. It's not a matter of years - it's a matter of moments.

From this view let us now assess what conditions are happening with the ozone. We have a) fragmented particles weakened by their magnetic glue being removed, b) we have tons of available metal molecular structures which have been dumped there by explosions, etc. c) we have space junk burning up, hitting the ozone layer, as it falls back to earth, and d) we have burned and unburned jet and rocket fuel within the same area, dumped there by mankind. Nature is conditioned to take everything within a given space and form some kind of particle balance, but there comes a point of no return and that's where we are

heading. Science now has a chance to view it within the ozone hole as it manifests as a corrosive, poisonous gas of the halogen group called chlorine.

Why does mankind insist on promoting continual crises situations which one day will be his undoing?

Over 40 years ago, Felix Ehrenhaft showed the scientific world flowing magnetic current. Had scientists then followed through with his findings, they could very well have utilized flowing magnetic current through a particle transmuter and opened the door for the development and use of magnetic energy. There would then be no need for this report which now runs the risk of being viewed as a new crackpot magnetic theory, because we'd be well on our way. Just 50 years ago - space flight was also a crackpot idea, only valid in the comic books.

There is hope. Just recently our company sent to scientists and agencies throughout the world detailed designs and building instructions for just such a device as was mentioned here when speaking of a particle transmuter. The major difference between this power generating method and generated electricity is that this produces magnetic eneregy - formed by grouping neutrons into magnetrons. This method of energy usage does not fragment any particles but returns them to the rim maintaining a perfect balance because it is a flow of energy in energy. Magnetic energy capitalizes on the principle of attract-attract working within the universal energy flow in a constructive not destructive manner. Attract-repel is not the only way.

Hopefully sciencists will help us to help mankind by investigating this new energy form. What happens to the planet Earth has yet to be decided. Will scientists continue to bend the knee, discarding magnetic energy and kill off now - - - the future?

Keep searching because the Creator Force of all that is desires to give mankind the answers as to how His world functions.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

jo

P.S. This letter is being copied and sent worldwide.

1997

Letter From Gerald J. Orlowski

February 4, 1988

THE PRESIDENT
The White House
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear Mr. President:

In reference to an editorial in the Arizona Republic, January 28, 1988, the editor stated in part, "President Reagan has yet to provide the imaginative leadership required to re-inspire America's journey to the stars and it is not clear from what quarter such vision will originate."

The question is not from which quarter will the vision originate, the question should be why are Americans forced to remain behind our true potential until unjust limitations are lifted? The proper mode of space travel is through a principle called the lift principle, unfortunately this topic is subject to Congressional Secrecy Order (Title 35, United States Code (1952), sections 181-188). In a revision expanding the scope of the secrecy order Federal Register, Volume 51, No. 180, Wednesday, September 17, 1986/Notices: excerpt, "You are hereby notified that the above-identified patent application has been found to contain subject matter which discloses critical technology with military or space application. The unauthorized disclosure of such subject matter would be detrimental to the national security, and you are ordered to keep the subject matter secret (as required by 35 U.S.C. 181) and you are further ordered NOT TO PUBLISH OR DISCLOSE the subject matter to any person except as specifically authorized herein." This order carries a ten year prison sentence for discussing this topic if once gagged. Just the fact it's gagged tells a person of its value as well as its threat. There has never been advancement when challenge and creativity are stifled.

The government has positioned itself through congressional order to confiscate our lift principle space craft (if we construct it) and if this confiscation of not only private property but years of hard work and effort and financial expenditures continues to be left unchallenged, the inventors of the United States of America will find themselves in no different a position than what we state is the condition of Communist countries. Freedom that is gagged without due warranty is not freedom -- it's usury.

How did our country get into this sad state of affairs? Evidence seems to indicate that the present Congress has fallen into the same fear trap as the Congress of 1952 which passed the first 'gag' order. By passing the new expanded secrecy order which now includes 'space application', our Congress somehow thinks we need war time secrecy while we are at peace.

In fairness let us review the results of this past secrecy action and see how it effects us today.

The past 36 years now show that by giving the Patent Office the control to confiscate inventions, it also gave them the power to stop all free energy inventions by putting a label on them. In so doing, they created a monster. The result is that after 36

years of this 'gag' order implementation, the Patent Office is now involved in the destruction of a safe environment which affects the whole world, not just the United States. The pollution circling our earth is caused in part by their inability to foresee the immense value of exploring the potential of free energy sources in units developed by people such as Rory Johnson, Trombly and Kahn, Henry Moray and so forth.

What will be the results of the expanding of the secrecy order? Will it accomplish its stated goals, that is to stop American inventors from selling S.D.I. information to the Russians? History shows that most of the thieves and traitors caught were current or former employees of the various U.S. Intelligence services which include the C.I.A., F.B.I., N.S.A., and the O.N.I. (World Book Encyclopedia 1986). The gag order has no effect on them.

The actual destructive impact this expanded gag order will have will be to construct an invisible wall between our last frontier - SPACE - and the American visionaries of the lift principle. The government scientists now in charge of S.D.I. would be horrified to find a space craft flying circles around their satellites which are used for intercepting rockets. Stopping American space visionaries is one thing but can we ignore the advancement Russia and other countries have made toward flying a space craft having no thrust? The reality is that our congress will raise up with a surprise shock at Russia's new great space exploit, when in fact we are ready to begin construction today and fly a lift craft in less than two years.

Please Mr. President, ask the Congress to lift the gag order for just two years and then watch America's free enterprise system shine once more.

Sincerely,

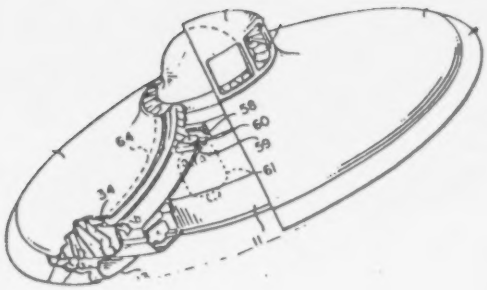
Gerald J Orlowski

Gerald J. Orlowski

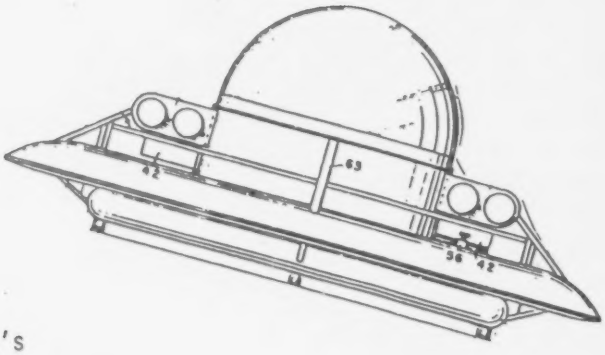
cc: Editors of newspapers
Senator William Proxmire
Senator Sam Nunn

Visionaries that contributed to the Lift Principle:

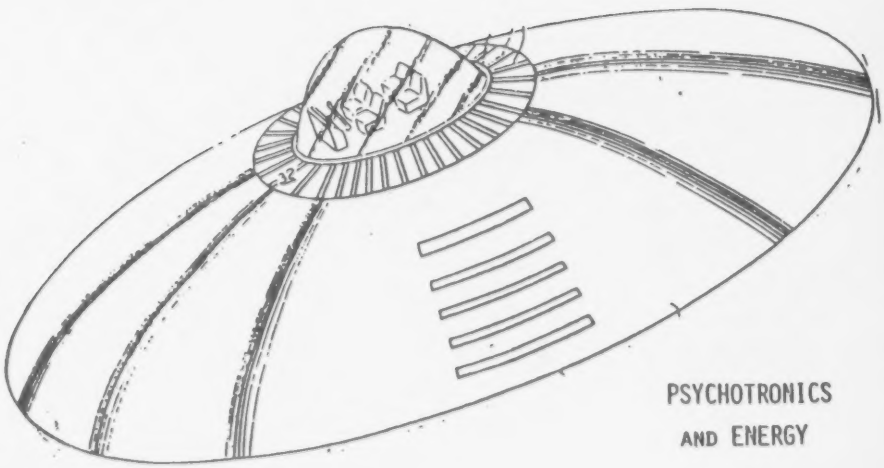
Alan Holt
Charles F. Brush
T. Townsend Brown
Otis Carr
M. Pages
Dr. Russel
T.J.J. See
Nikola Tesla
Sinichi Seike
John Searl
H.C. Dudley
G.E. Hagen
A.P. Seversky
W.J. Coleman
G.A. Hill
W.A. Rice
V. Gradacek
A.H. Bahnson
J.F. King
E.C. Okress
J.F. Engelberger
W.J. Hooper
H.W. Wallace
A. DeBrocqueville
Felix Ehrenhaft
Clarence D. Lennon
Robert G. Varner
L. E. Mueller
E. Guerrero
Earle B. Mayfield
Vernal Josephson
Alexander M. Lippisch
S.D. Drell
I.R. Barr
E.E. Slaughter
D.Q. McMasters
H. Naught



ELECTRO-GRAVITY
PROPULSION
SYSTEMS



U.F.O.'s, V.T.O.L.'s
AND ANTIGRAVITY



PSYCHOTRONICS
AND ENERGY

High-Energy Electrostatics Research

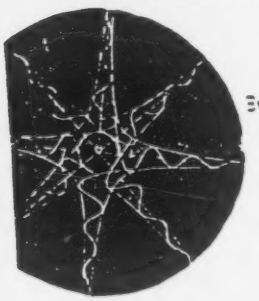
TITLE: SEE: WAVE THEORY OF GRAVITY

T.J.J. SEE: Wave Theory of Gravitation --- In spite of high recommendation by Nikola Tesla (who rejected Einstein's Theory of Relativity) and by the psychic Edgar Cayce and others, the 'Wave-Theory of the Aether' developed in the 1920s by the noted astronomer Capt. T.J.J. See has been completely ignored by most modern physicists. See explained gravitational, ma netic & electrostatic fields as longitudinal or compression waves in the aether, of approx. the same magnitude as the distances over which they operate. Light, heat & radio are descril as transverse or shear waves in the aether. When the longitudinal aether waves radiating fr masses couple, the produce a relative aether vacuum between them, & the bodies are pushed together. The apparent increase of mass of an accelerating body is caused by increasing dra resistance from the viscous aether. If a body is rotated at a certain speed, an associated aether vacuum is produced which prevents transmission of the gravitational force. This open the way to anti-gravity levitation as demonstrated by Searl, TT Brown, & Laithwaite (v.i.). The theories of Ch. Brush, Dr. Nieper, Prof. Nipher & others also find unification herein. Here is a bibliography, review, & 2 articles by See, introducing his theory...20 pp...
PRICE: $ 3

WAVE - THEORY!

DISCOVERY OF THE CAUSE OF GRAVITATION!

MAGNETISM, ELECTRODYNAMICS, AND OTHER FORCES OF NATURE
OBEYING THE GEOMETRICAL LAW OF THE INVERSE SQUARES:
WITH COMPLETE MATHEMATICAL and PHYSICAL ANALYSIS.



Based on

Fourier's Wave-Theorem of 1802, $\frac{1}{\pi}\int_{-\infty}^{+\infty}\frac{\sin P\xi\, d\xi}{\xi}=1,$

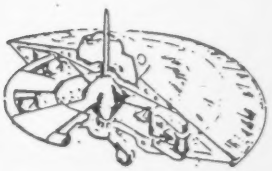
From Which Follow

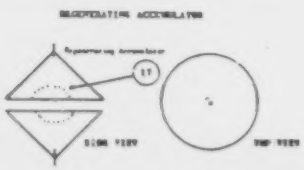
Every Formula of Newton and LaPlace.

REX RESEARCH

P.O. Box 1258
Berkeley
Calif. 94704
415-843-1950

'INFOLIO'
NR. 041-CAR
TITLE: CARR / UTRON





Otis T. CARR: The Utron --- In the late 1950s, Otis T. Carr discovered the 'Utron', the molecular shell that houses the atoms. This cohesion of 'molecular shells' is brought about by inertial systems in the gravity field manifested in the 2 poles of natural magnetism & electromagnetism...By 'hatching' the atomic egg, particularly of paramagnetic & diamagnetic elements -- especially Bismuth, atomic energy could be released gently. Tests & demonstrations of working models were publicized in the 1950s, the OTC Enterprises soon collapsed under the pressures brought to bear on it. Efforts are underway to revive this proven technology, which was embodied as a free-energy generator and as a levitation craft Carr stated: "Any vehicle accelerated to an axis rotation relative to its attractive inertial mass, immediately becomes activated by free-space-energy and acts as an independent force...We have shown that a charged body, accelerated to an axis rotation relative to its attractive inertial mass, indicates polarity in a given direction. The dip-needle points, say, up toward the top of the body. But mount this whole rotating body, with its spindle, on another platform and rotate this platform on a spindle, then if the counter--rotation is greater than the inertial forward rotation of the body, a dip-needle on the 2nd platform will point down while the first dip-needle points up, indicating complete relativity of polarity. When the exact counter-rotation matches the forward rotation the body loses its polarity entirely and immediately becomes activated by free-energy (tensor stresses in space) and acts as an independent force... The above-described assembly of counter-rotating charged masses becomes weightless and will escape the immediate attractio of gravitational forces..."

Here are 120 pages of articles, interview transcripts, and detailed diagrams of Construction Plans for model UTRON-powered craft. This info completely disappeared from public access after 1960. Here it is again at last, only 25 years later !
PRICE: $ 16

NIKOLA TESLA

RESEARCH

WHY HAVE MIGHTY, POWERFUL FORCES TRIED TO SUPPRESS THE AMAZING STORY OF A GENIUS BORN YEARS AHEAD OF HIS TIME? He could draw inventions out of the ether -- visualize complete, complicated electrical circuits never known to man. This genius made an invaluable contribution to the massive utilization of electrical energy for practical purposes and thus, in fact, revolutionized the world.

Today in Minnesota an experimental "reciever" is being built to test the possibilities of wireless transmission of electricity. In Timmons, Canada, a "transmitter" is being built by Canadians interested in the Tesla theories.

We have scores of inquiries for books on, or by, Nikola Tesla (1856-1943). Yet the average school boy and most adults know nothing of this man. Health Research has sold many titles to governmental agencies.

There was an organized movement across the nation to delete all Tesla data from libraries - started soon after his death in 1943. Ralph Bergstresser wrote an article which appeared in The Reader's Digest in 1946, titled: *Nikola Tesla, The Forgotten Superman Of Our Industrial Age.*" This article, which we sell a 1.50 has done more to stimulate interest in Tesla than anything anyone could dream or imagine. (*We reprinted this with the full permission of the author).

We now have a new booklet of some 45 + illustrated pages about the fabulous Nikola Tesla who shunned society and preferred working with his experiments. Several have tried to interest movie-land into making a film on Tesla. One of our customers has delivered into our hands a series of 8½ x 11 papers & articles, which he has spent many years accumulating. He wishes them published - .... The title of these combined articles is: Assorted Tesla Articles.

The pamphlet includes the following articles:

TESLA - A Great Inventor (Photo of Tesla as a young man); Proceedings of The Radio Club of America, Inc. - Vol. 45, No. 2; Who Was Tesla?; Nikola Tesla, World's Greatest Engineer - By Commander E. J. Quinby, USN (Ret.). Tesla foresaw a complete modern type of service, and called this World Wide Wireless System (Cheap Electrical Power For the People). This would be transmitted to local areas without expensive wires & poles (without powerful Utilities taking their 'cut'. Many power companies did not wish Tesla ideas to become known to the people!

One of Tesla's giant alternators has been preserved in the Smithsonian Institute, Where It Stands As a Monument to Tesla's pioneering.; Letter to Mr. Nick Basura (who lent us these folios for publication) by Archibald E. Roberts, Lt. Col., US Army (Ret.) Director, CRC; Letter from Dr. Revilo P. Oliver, Ph.D. "Is the probability that the USSR is experimenting with low-frequency (Tesla) modulations as a device to influence brain-waves at great distances and thus generate, on command, violence or passivity in selected populations; Tesla (Modern Aviation); The Father of RC; Picture Printed in the March 1904 'Electrical World'; and many more articles. Offset printed.
(California Residents Add . Tax). Handling $1.70 minimum on ALL orders.

HEALTH RESEARCH, P.O. BOX 70, MOKELUMNE HILL, CALIFORNIA 95245

have invented a fourth dimensional space vehicle

This Fourth Dimensional Vehicle is powered by the revolutionary Utron electric accumulator, which is completely round and completely square, and generates its own power, which is electro-magnetism and electromotive force. It can be launched from the earth, and does not have to be blasted into space. The basic design was brought to the attention of the United States Government, and a patent application was filed in 1949.

Some tests were independently made by qualified engineers at one of America's leading plants and it was estimated that a small model, only four inches in diameter, produced energy equivalent to one-thousand tons. This was in 1952, and Mr. Carr was unable to interest anyone in his efforts at that time. Things have changed, and the Government has now put its blessing on space-flight development.

At the present time the rocket enthusiasts are commanding topmost attention. But there will be changes in thinking, and new directions of endeavor very soon. Our experiments with circular-foil design, as relates to gravity, electro-magnetism, and electromotive force, have led us to the certain conclusion that it is possible to use the inverse-proportion laws of Newton as successfully as the third law of motion applies to accelerated rockets. We will produce the OTC-XI circular-foil spacecraft as the first operational prototype as symbolized in this conception drawing.

2004

In our current research (see enclosed diagrams and pictures in experimental report) we are building physical apparatus to imitate and simulate the same forces of our planets' system to create an independent and controllable system which is free of our planets gravitational force. We refer to figure 1 which illustrates the invisible mechanics of our planet as explained by Dr. Walter Russell and not available in any current conventional physics books. We will be imitating these mechanics which assemble and disassemble matter in the so-called Third Dimension as demonstrated by Dr. Russel, T.J.J. See and Nikola Tesla. Shinichi Seike, Otis Carr, John Searl and many other gravity researchers have come to some of the same basic conclusions in their experimental work of what is needed to construct apparatus capable of simulating a gravitational field and other phenomena occurring with this planet system and other celestial bodies.

FIG. 1

ANALYSIS OF THIS PLANET'S POTENTIAL POSITION IT'S OBLATENESS AND ITS INCLINATION TO ITS OWN AND TO THE SOLAR ECLIPTIC
CHARGE
DISCHARGE
DISCHARGE
CHARGE
All mass is formed by a contraction of the electric poles of the generative cones of energy to the point of north at its gravitative center and by an expansion of the contours of the radiative cones until they disappear in the plane of the equator
FIG. 1 C
AS MAGNETIC BANS CONTRACT TOWARD THE POLE OF ROTATION, THE CANCER CAPRICORN BELT, WHICH REPRESENTS THE ECLIPTIC AREA, ALSO CONTRACTS TOWARD DISAPPEARANCE IN THE PLANE OF THE EQUATOR

We know we have at least two vortices interacting apex to apex to generate and hold mass in the microscopic or macroscopic dimensions. These vortices also disassemble mass to turn it back into the orginal space fabric.

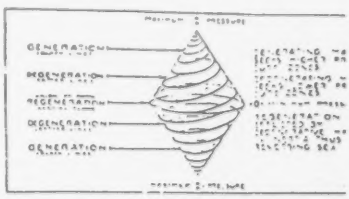
Every mass has a certain field and frequency of motion that keeps it solid. Expose it to a higher frequency of rotation and it breaks bonds, changes shape, volume, pressure, density, rotation, etc. It's physical existence (Third Dimension existence) or manisfestation is only if those conditions are met, otherwise it dissolves. Vortices, cones of energy movement, are the producers and destroyers of all these conditions for physical appearance. To understand how to produce these shapes of whirling power and alter them is the secret to manifesting and dissipating all elements and materials in this universe.

A physical object takes on and holds field shapes or geometrical patter which are the records of what these vortices did to this object to manifest and lock it in its shape. These fields tell the angles and frequency of interaction that occurred between electricity and magnetism to produce the phenomena.

Here we are using the reverse law, a shape can demonstrate its field and be used to help simulate that field as surely as a field can produce a certain shape.

Gravity experimenters have sought to create the vortexian field pattern We maintain this shape in figure 2 (a shape having completely round and completely aquare dimensions) is the physical shape to represent the basic structure of space and the union of two cones of energy which are the manifestors and destroyers of all waves and every particle there is.

FIG.2



The shape itself represents and aids certain phenomenon natural in our universe. Current flowing from the base of a cone or the equator of our central power cone (utron)(see experimental report) or from the mouth of a

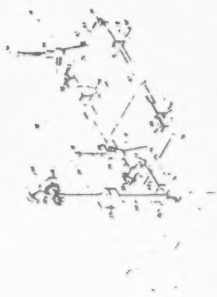
This is a technically-interpreted rewrite of the official Translation of French Patent 1,253,902; IPC- B 64 c; Marcel-Jean-Joseph Pages; application filed January 5, 1960; granted January 9, 1961. The interpretation is by High-Energy Electrostatics Research.

COSMIC FLIGHT MACHINE

1. The present invention puts into practice the results of theoretical and experimental studies and scientific observations which show a loss of theoretical mass in all systems of the condenser type, and more particularly in rotating systems of the proton-electron type, including a flux of one or more electrons describing a closed trajectory around a central, positively charged nucleus. This loss of mass can be explained theoretically by various hypotheses. It is first of all likely that the atmospheric void (the "ether" or vacuum of space) is constituted by a medium of material particles or photons. The creation of a vibratory field or of an electromagnetic field in such a space would result in the expulsion of the photons from this space and would cause a photonic void. This photonic void or absolute void would determine an Archimedian thrust on the space under consideration analogous to that established for a closed space put under vacuum. The "photonic void" logically becomes more elevated as the power of the vibratory energy becomes greater.

2. It is likewise possible to speculate that the Universe is bathed in a system of more or less stable electrical or magnetic waves, and that this loss of mass is due to the creation of an energetic void, that is, the creation, by the proton-electron system, of an electromagnetic force which has a direction opposed to the so-called massic attraction. The result is that the increase of the potential energy of a proton-electron system by the increase of the speed of the electron reduces the apparent

2,989,271
VERTICAL RISING AIRCRAFT
Alexander H. Bahr, Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 9, 1958, Ser. No. 740,965
7 Claims. (Cl. 244—23)



1. In an aircraft having a frame, a pair of thrust nozzles adjustably mounted thereon, and a power source for creating and delivering gas under pressure to said nozzles to thereby exert a reactive force against the aircraft frame, a valve for controlling the extent of the gas flow to the nozzles, the combination therewith of mechanism for selectively positioning the longitudinal axes of said nozzles with respect to the aircraft frame, comprising a control post, mounted on said frame for universal movement about a point intermediate its ends and for rotation about its longitudinal axis and connections between the posts and said nozzles, whereby movement of the post to one position will result in positioning the nozzles to cause an upward thrust against the frame, movement to another position will result in positioning the nozzles to cause a forward thrust, movement to a third position will result in positioning the nozzles to cause a rearward thrust, movement to a fourth position will result in positioning the nozzles to cause a lateral thrust, and rotational movement about the post's longitudinal axis will cause the

GAZETTE JUNE 20, 1967

nozzles to tilt in directions opposite to one another to exert lateral and opposite thrust against the frame to thereby create rotation of the frame about a vertical axis intermediate the nozzles.

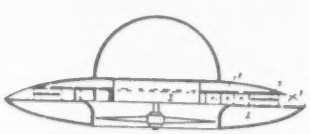
3,243,144
PERSONNEL PROPULSION UNIT
John K. Hulbert, Grand Island, and Wendell F. Moore, Youngstown, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed July 17, 1964, Ser. No. 383,271
14 Claims. (Cl. 244—4)

1. A propulsion unit for rendering an individual airborne comprising, in combination,
a torso-engaging portion fixedly mounting the weightier components of the unit,
an upper portion including propulsion nozzles for supplying motivating thrust,
means pivotally connecting said upper portion to said torso-engaging portion whereby the aforesaid motivating thrust is operable to lift said torso-engaging portion and control the direction of motion thereof,
a pair of hangers suspended from said upper portion, each hanger presenting a loop for engaging under the user's armpits to suspend the user from said upper portion, said hangers being universally movable with respect to said upper portion.

3,275,099
METHOD AND APPARATUS FOR INCREASING THE EFFECTIVENESS OF AIR CUSHION VEHICLES
Carl Weiland, Seefeldstrasse 124, Zurich, Switzerland
Filed Oct. 16, 1958, Ser. No. 767,575
Claims priority, application Switzerland, Oct. 22, 1957, 51,837
18 Claims. (Cl. 180—7)

13. The method of supporting a body, having a substantially airtight undersurface, above and in close proximity to a pressure-restraining lower surface, the steps comprising: emitting air under pressure from and beneath the body to develop between the undersurface and a lower surface a cushion of air under superatmospheric pressure sufficient to lift the body to a stable elevation above the lower surface; and retarding the flow of air outwardly from between the surfaces along at least a portion of the periphery of the undersurface by emitting from the body a downwardly-directed jet-like curtain of air extending along the peripheral portion of the undersurface, and spaced outwardly of the location where the air was emitted, to develop the cushion.

3,243,148
VERTICAL-TAKEOFF-LANDING AIRCRAFT
Paul B. Clover, 211 Canal St., San Rafael, Calif.
Filed Apr. 27, 1964, Ser. No. 363,747
4 Claims. (Cl. 244—23)



1. An aircraft comprised of a circular airfoil with an integral center opening and an impelling means for moving air mounted axially and operatively therein; said airfoil supporting a cover spaced above and mounted axially with the airfoil opening defining a duct within which, and operatively mounted on the supporting structure, a number of pivoted aileron-like surfaces and a plurality of vane-like surfaces pivoted to contact the inlet airstream on both faces providing means for control and stability; said impelling means operating to draw air inwardly over the upper surface of the airfoil producing a negative pressure and resultant lift, thence around the faces of control surfaces within the duct, thence ejected downwardly producing thrust.

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3,047,208
DEVICE FOR IMPARTING MOVEMENT TO GASES
Henri Coanda, Paris, France, assignor to Sebac Nouvelle S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed Apr. 30, 1957, Ser. No. 656,081
Claims priority, application France Sept. 13, 1956
2 Claims. (Cl. 230—95)

1. A device for imparting a high velocity of flow to a compressible fluid by means of a relatively small flow of an auxiliary compressible fluid, said device comprising a secondary convergent-divergent nozzle providing a main fluid path for a compressible ambient fluid to which rapid flow is to be imparted, said secondary nozzle having an annular wall defining a convergent inlet and a divergent outlet and a circular throat coupling together said inlet and outlet, annular means coaxial with said secondary nozzle defining in conjunction with said convergent inlet of the secondary nozzle at least one annular primary nozzle in the inlet of said secondary nozzle and having a convergent inlet and a divergent outlet disposed for delivering said compressible ambient fluid into and within the inlet of said secondary nozzle, said annular wall of said secondary nozzle having an annular Coanda slot extending around said annular means and spaced radially outwardly therefrom, said slot having spaced lips, a chamber communicating with said slot and adapted to receive an auxiliary gaseous fluid under pressure which is discharged as a high-speed jet through

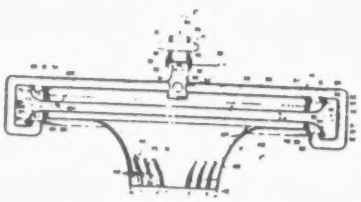
said Coanda slot into said convergent inlet of said primary nozzle, said wall having an annular portion defining a cross-section of said primary nozzle a surface forming an extension of the lip of said slot on the side toward the outlet of said primary nozzle and which progressively recedes from the direction of emergence of said pressure fluid through said slot so that a stream of fluid discharged through said slot tends to follow said surface and to induce adjacent ambient fluid in said primary and secondary nozzles to join in the stream, and said stream of pressure fluid and ambient fluid flowing outwardly through said divergent outlet of said secondary nozzle.

3,537,669
MANNED DISC-SHAPED FLYING CRAFT
James N. Modesti, Brooklyn, N.Y.
(230 W. 76th St., New York, N.Y. 10023)
Filed Feb. 5, 1968, Ser. No. 703,011
Int. Cl. B64c 29/04
U.S. Cl. 244—23 7 Claims

An experimental and disc shaped flying craft or "spacecraft" so constructed that the bottom half of the flying craft is raised or "deflected" to a higher level from its normal horizontal position, that is, at a right angle to its axis of rotation, with an effect on the gravity pull. The flying craft has means for obtaining a cancelling effect or action on the gravity pull, by the use of centrifugal force, with a loss in weight of the disc shaped flying craft. The bottom surface of the disc shaped flying craft is conical in shape and its top surface is convex in shape. The craft is provided with radially extending tubular arms, each of which contains a supply of mercury which under centrifugal pull slides at an upward angle to the other edge of the disc shaped flying craft thereby adding mass and weight to the deflected centrifugal pull thus increasing the power of the pull.

3,261,162
LIFTING APPARATUS
Henri Coanda, Paris, France
(777 Summer St., Stamford, Conn.)
Filed May 20, 1964, Ser. No. 368,852
20 Claims. (Cl. 60—35.5)

1. In propulsion apparatus, in combination, first and second fluid conductor means symmetrically disposed about an axis of flow in spaced-apart relationship with each other, said conductor means respectively including first and second Coanda slots and the facing portions of said conductor means defining a third Coanda slot, a supply of fluid under pressure, means for directing fluid from said supply to said conductor means and through said first and second Coanda slots, the fluid passing through said first and second Coanda slots inducing a primary flow



of ambient fluid into said third Coanda slot, and lip means on the downstream side of said third Coanda slot and having a curved surface in juxtaposition therewith, the fluid flowing through said third Coanda slot inducing a secondary flow of ambient fluid over said curved surface and in the direction of said axis, to thereby produce an axially directed propulsion force.

2,052,869
DEVICE FOR DEFLECTING A STREAM OF ELASTIC FLUID PROJECTED INTO AN ELASTIC FLUID
Henri Coanda, Clichy, France
Application April 19, 1935, Serial No. 17,361
In France October 8, 1934
5 Claims. (Cl. 299—107)

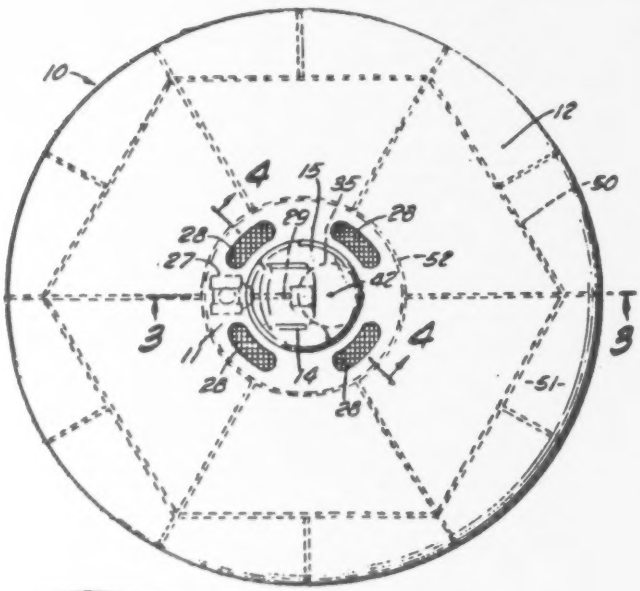
1. A device for controlling the discharge into an elastic fluid atmosphere of an elastic fluid moving at a high velocity, which comprises, a part provided with an outlet conduit, and means carried by said part, located wholly on only one side of the line of discharge of said conduit, for checking the flow of the elastic fluid of said atmosphere induced by the stream of elastic fluid issuing from said conduit.

May 23, 1967 D. Q. McMASTERS 3,321,156

UNIVERSALLY MANEUVERABLE AIRCRAFT

Filed March 18, 1965 3 Sheets-Sheet 1

FIG. 1.



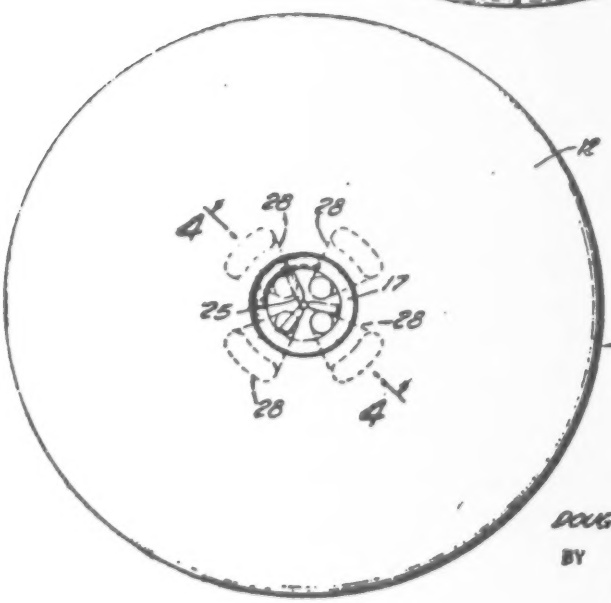


FIG. 2.

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United States Patent Office 3,626,606
Patented Dec. 14, 1971

3,626,606

METHOD AND APPARATUS FOR GENERATING A DYNAMIC FORCE FIELD

Henry W. Wallace, Ardmore, Pa.
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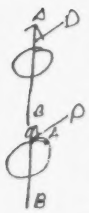
Filed Nov. 4, 1968, Ser. No. 773,116
Int. Cl. G09b 23/06
U.S. Cl. 35—19
10 Claims

ABSTRACT OF THE DISCLOSURE

Apparatus and method for generating a non-electromagnetic force field due to the dynamic interaction of relatively moving bodies through gravitational coupling, and for transforming such force fields into energy for doing useful work.

The method of generating such non-electromagnetic forces includes the steps of juxtaposing in field sense relationship a stationary member, comprising spin nuclei material further characterized by a half integral spin value, and a member capable of assuming relative motion with respect to said stationary member and also characterized by spin nuclei material of one-half integral spin value; and initiating the relative motion of said one member with respect to the other whereby the interaction of the angular momentum property of spin nuclei with inertial space effects the polarization of the spin nuclei thereof, resulting in turn in a net component of angular momentum which exhibits itself in the form of a dipole moment capable of dynamically interacting with the spin nuclei material of the stationary member, thereby further polarizing the spin nuclei material in said stationary member and resulting in a usable non-electromagnetic force.

This invention relates to an apparatus and method for use in generating energy arising through the relative motion of moving bodies and for transforming such generated energy into useful work. In the practice of the present invention it has been found that when bodies composed of certain material are placed in relative motion with respect to one another there is generated an energy field therein not heretofore observed. This field is not electromagnetic in nature; being by theoretical prediction related to the gravitational coupling of moving bodies.



The initial evidence indicates that this nonelectromagnetic field is generated as a result of the relative motion of bodies constituted of elements whose nuclei are characterized by half integral "spin" values; the spin of the nuclei being synonymous with the angular momentum of the nucleons thereof. The nucleons in turn comprise the elemental particles of the nucleus; i.e., the neutrons and protons. For purposes of the present invention, the field generated by the relative motion of materials characterized by a half integral spin value is referred to as a "kinemassic" force field.

It will be appreciated that relative motion occurs on various levels, i.e., there may be relative motion of discrete bodies as well as of the constituents thereof including, on a subatomic level, the nucleons of the nucleus. The kinemassic force field under consideration is a result of such relative motion, being a function of the dynamic interaction of two relatively moving bodies including the elemental particles thereof. The value of the kinemassic force field, created by reason of the dynamic interaction of the bodies experiencing relative motion, is the algebraic sum of the fields created by reason of the dynamic interaction of both elementary particles and of the discrete bodies.

For a closed system comprising only a stationary body, the kinemassic force, due to the dynamic interaction of

the particles therein, is zero because of the random distribution of spin orientations of the respective particles. Polarization of the spin components so as to align a majority thereof in a preferred direction establishes a field gradient normal to the spin axis of the elementary particles. The present invention is concerned with an apparatus for establishing such a preferred orientation and as a result generating a net force component capable of being represented in various useful forms.

According, the primary object of the present invention concerns the provision of means for generating a kinemassic field due to the dynamic interaction of relatively moving bodies.

A further object of the present invention concerns a force field generating apparatus wherein means are provided for polarizing material portions of the apparatus so as to reorient the spin of the elementary nuclear components thereof in a preferred direction thereby generating a detectable force field.

The kinemassic force field finds theoretical support in the laws of physics, being substantiated by the generalized theory of relativity. According to the general theory of relativity there exists not only a static gravitational field but also a dynamic component thereof due to the gravitational coupling of relatively moving bodies. This theory purposes that two spinning bodies will exert force on each other. Heretofore the theoretical predictions have never been experimentally substantiated however, as early as 1896, experiments were conducted in an effort to detect predicted centrifugal forces on stationary bodies placed near large, rapidly rotating masses. The results of these early experiments were inconclusive, and little else in the nature of this type of test is known to have been conducted.

It is therefore another object of the present invention to set forth an operative technique for generating a measurable force field due to gravitational coupling of relatively moving bodies.

Another more specific object of the present invention concerns a method of generating a non-electromagnetic force field due to the dynamic interaction of relatively moving bodies and for utilizing such forces for temperature control purposes including the specific application of such forces to the control of lattice vibrations within a crystalline structure thereby establishing an appreciable temperature reduction, these principles being useful for example in the design of a heat pump.

The foregoing objects and features of novelty which characterize the present invention as well as other objects of the invention are pointed out with particularity in the claims annexed to and forming a part of the present specification. For a better understanding of the invention, its advantages and specific objects allied with its use, reference should be made to the accompanying drawings and descriptive matter in which there is illustrated and described a preferred embodiment of the invention.

In the drawings:

FIG. 1 is an overall perspective view of equipment constructed according to the present invention, this equipment being designed especially for demonstrating the useful applications of kinemassic force fields;

FIG. 2 is an isolation schematic of apparatus components comprising the kinemassic field circuit of the apparatus of FIG. 1, showing the field series relationship of generator and detector units;

FIGS. 3, 4 and 5 show the generator of FIGS. 1 and 2 in greater detail;

FIG. 6 is an enlarged view of the detector working air gap area of the apparatus of FIGS. 1 and 2;

FIG. 7 is a sectional view of FIG. 6 showing associated control and monitoring equipment; and

FIG. 8 represents measured changes in the operating characteristics of a crystalline target subject to a kine-

Sept. 29, 1964 E. B. MAYFIELD ETAL 3,150,483

PLASMA GENERATOR AND ACCELERATOR

Filed May 10, 1962

FIG. 1.

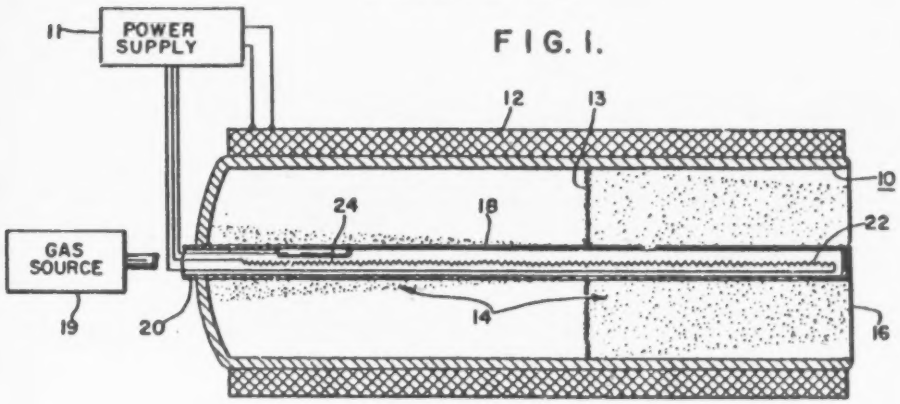


FIG. 2.

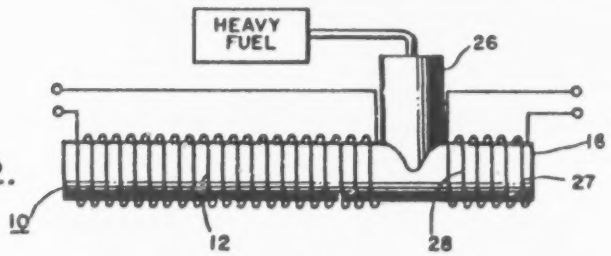
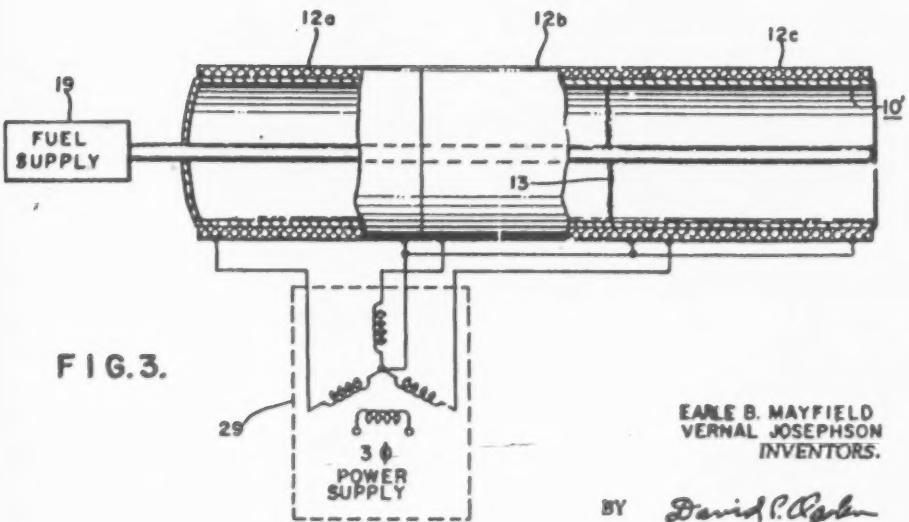


FIG. 3.



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ATTORNEY.

United States Patent Office

3,495,791

Patented Feb. 17, 1970

3,495,791

METHOD OF AND APPARATUS FOR EFFECTING ELECTRO-MECHANICAL ENERGY INTERCHANGE IN A SPACE VEHICLE

Sidney D. Drell, 570 Alvarado Row, Stanford, Calif. 94305; Henry M. Foley, 460 Riverside Drive, New York 10027; and Malvin A. Ruderman, 29 Washington Square W., New York 10011, both of New York

Filed Apr. 26, 1965, Ser. No. 450,798

Int. Cl. B64g 1/20

U.S. Cl. 244—1

12 Claims

ABSTRACT OF THE DISCLOSURE

A propulsion method and apparatus for space vehicles wherein the movement of a conductive element on the vehicle across the earth's magnetic field produces an electro-mechanical energy interchange through the intermediary of Alfven radiation, so that, in effect, a push or pull against the earth's magnetic field is achieved.

The present invention relates generally to space vehicles and more particularly to a method of and apparatus for effecting electro-mechanical energy interchange in a moving space vehicle to control its flight characteristics and/or to provide for energy storage therewithin.

It is well established that any space vehicle, whether it be a satellite arranged to orbit the earth in or above the ionosphere or a vehicle directed along an interplanetary course, must be provided with sufficient fuel or propellant, not only to achieve the requisite initial acceleration from the position of launching, but also to overcome the drag forces experienced in flight. Additionally, most space vehicles also require a source of electrical power for control or communications purposes. It is obvious that these fuel and power requirements reduce the useful "payload" which may be transported by any space vehicle.

Accordingly, it is a general object of the present invention to provide a method of and apparatus for effecting an electro-mechanical interchange in a moving space vehicle so that, for example, propulsion of the vehicle can be effected to overcome the mentioned drag forces without the attendant necessity for carrying conventional fuel for such purpose.

This general object is achieved through utilization of certain scientific principles together with certain experimentally determined facts concerning the environment of a moving space vehicle.

Scientifically, it is now well established that a conductor moving across a magnetic field B with a velocity v_c in a vacuum will have an electrical charge separation induced therein sufficient to cancel the electrical field E seen by a co-moving observer. Mathematically, this fact is expressed by

$$E = \frac{v_c \times B}{c} \qquad (1)$$

c being the velocity of light. If the vacuum be replaced by a plasma including substantially equal numbers of electrons and ions which can function as an electrical conductor, in effect, a circuit is established whereby the charge induced on the conductor can flow and establish a current, the energy propagating as an Alfven wave along the direction of the established magnetic field, as will be explained in detail hereinafter. Thus an electro-mechanical interchange takes place.

Experimentally, it has been determined not only that a rather large magnetic field exists in the vicinity of the earth but it varies from 0.5 gauss at the earth's surface to a value of 0.2 gauss at an altitude of 1600 kilometers whereat the Echo I satellite was orbiting. In turn, the ionospheric plasma at 1600 kilometers has been measured to indicate the existence at this altitude of 5×10^2 electrons/cm.^{3} and a corresponding ion mass density of 3×10^{-21} grams/cm.^{3} for He^+ or, approximately 10^{-20} grams/cm.^{3} if the ions are H^+. Estimated values for magnetic field and ionic densities in interplanetary space are 10^{-5} gauss and 10^{-23} grams/cm.^{3}, respectively, and of course increase appreciably as a planet or star is approached.

It can then be concluded generally from consideration of Equation 1 that since B is determined for any particular location in space and c is, of course, a fixed quantity, the velocity v_c of the vehicle will establish a proportionate electric field E. In turn, depending on the field intensity and the precise nature of the plasma at the location of the vehicle, the resultant current and generation of Alfven waves will be determined by the effective overall resistance of the electrical circuit of which the conductor is one element.

Accordingly, it is a feature of the present invention to provide a method of and apparatus for energy interchange wherein the effective internal resistance of a conductor carried by a space vehicle is designed to control the character and amount of the energy interchange.

In accordance with one aspect of the invention, the internal resistance of the conductor is made positive whereupon the kinetic energy of the space vehicle, and more particularly, of the associated conductor, is converted to electrical energy in the form of Alfven radiation. Consequently, current flowing through the conductor can serve as a source of electrical power as required for operation of the vehicle or for communication purposes. Since, at the same time, kinetic energy is lost, this mechanism functions to lower the velocity of the space vehicle and in the specific case of a satellite, would serve to bring the satellite to a lower altitude without use of any propellant.

In accordance with an alternative aspect of the invention, the effective internal resistance is made negative by use of an independent source of electrical power, such as nuclear reactors or solar panels located on the vehicle and electrically associated with the conductor whereby ultimately electrical energy is converted to mechanical or kinetic energy of the vehicle. Thus, a novel form of propulsion mechanism is provided which can be used to counteract drag forces on the vehicle, provide additional acceleration thereof, or, in a correlative function, to store electrical energy as kinetic energy.

These as well as other objects and features of the invention will become more apparent from a perusal of the following description taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a diagrammatic perspective view of a conductor moving through a plasma in a direction perpendicular to a constant magnetic field and illustrating the generation of Alfven waves,

FIG. 1A is a diagrammatic top plan view of the FIG. 1 illustration,

FIG. 2 is a diagrammatic perspective view of a vehicle arranged to convert mechanical to electrical energy in accordance with the present invention, and

FIG. 3 is a diagrammatic perspective view of another vehicle which constitutes a modified embodiment of the invention wherein electrical energy is converted to mechanical or kinetic energy.

With initial reference to FIG. 1, a rectangular conductor 10 is assumed as moving through an ideal collisionless plasma with a velocity v_c in a direction perpendicular to a predetermined magnetic field B. The magnetically induced electric field E in the conductor 10 is

United States Patent Office 3,626,605 Patented Dec. 14, 1971

3,626,605

METHOD AND APPARATUS FOR GENERATING A SECONDARY GRAVITATIONAL FORCE FIELD

Henry Wm. Wallace, Ardmore, Pa.
(903 Cherry Lane, Laurel, Miss. 39440)

Filed Nov. 4, 1968, Ser. No. 773,051
Int. Cl. G09b 23/06
U.S. Cl. 35—19 10 Claims

ABSTRACT OF THE DISCLOSURE

Apparatus and method for generating a time variant non-electromagnetic force field due to the dynamic interaction of relatively moving bodies and for transforming such force fields into energy for doing useful work.

The method of generating such time variant force fields including the steps of juxtaposing in field series relationship a stationary member of spin nuclei material, and a member capable of assuming relative motion with respect to said stationary member also characterized by spin nuclei material; initiating relative motion by rotation of said one member with respect to the other, which rotational motion may occur both about an axis within the plane of said other member and about an axis perpendicular thereto; whereby the rotational motion of said one member about the axis perpendicular to the plane of said other member results in the dual interaction of the angular momentum property of said one member with inertial space and also with respect to the angular momentum property of said other member thereby resulting in a dynamic interaction field arising through gravitational coupling which dynamic interaction field is further characterized by its nonelectromagnetic nature and its mass-proximity and relative motion dependency; the rotation of said one member about the axis within the plane of said other member further resulting in an undulation of the dynamic interaction field within said other member which in turn gives rise to a secondary time-variant gravitational field in the surrounding space.

The present invention relates to an apparatus and method for generating a time-variant force field due to the relative motion of moving bodies; which force field exhibits itself in the form of an induced secondary gravitational force. As such, this invention constitutes a continuation-in-part of an application filed Nov. 4, 1968 by the same inventor, entitled Method and Apparatus for Generating a Dynamic Force Field and bearing Ser. No. 773,116.

In the practice of the present invention it has been found that when bodies composed of certain material are placed in relative motion with respect to one another there is generated an energy field therein not heretofore observed. This field is not electromagnetic in nature; being by theoretical prediction related to the gravitational coupling of relatively moving bodies.

The initial evidence indicates that this nonelectromagnetic field is generated as a result of the relative motion of bodies constituted of elements whose nuclei are characterized by half integral "spin" values, the spin of the nuclei being associated with the net angular momentum of the nucleons thereof. The nucleons in turn comprise the elemental particles of the nucleus; i.e., the neutrons and protons. For purposes of the present invention the field, generated by the relative motion of materials characterized by a half integral spin value, is referred to as a "kinemassic" force field.

It will be appreciated that relative motion occurs on various levels, i.e., there may be relative motion of dis-

cluding, on a subatomic level, the nucleons of the nucleus. The kinemassic force field under consideration is a result of such relative motion, being a function of the dynamic interaction of two relatively moving bodies including the elemental particles thereof. The value of the kinemassic force field created, by reason of the dynamic interaction of the bodies experiencing relative motion, is the algebraic sum of the fields created by reason of the dynamic interaction of both elementary particles and of the discrete bodies.

For a closed system comprising only a stationary body, the kinemassic force, due to the dynamic interaction of the subatomic particles therein, is zero because of the random distribution of spin orientations of the respective particles. Polarization of the spin components so as to align a majority thereof in a preferred direction establishes a flux field aligned with the spin axes of the elementary particles. The present invention is in part comprised of an apparatus for polarizing its spin nuclei material, while additional means are provided to induce an alternating or undulating effect in the kinemassic field so generated.

Accordingly, a primary object of the present invention concerns the provision of means for generating a time-variant kinemassic field within a permeable field body due to the dynamic interaction of relatively moving bodies and the relative rotation of said generating means with respect to the permeable field body.

The kinemassic force field finds theoretical support in the laws of physics, being substantiated by the generalized theory of relativity. According to the general theory of relativity three exists not only a static gravitational field but also a dynamic component thereof due to the gravitational coupling of relatively moving bodies.

This theory proposes that two spinning bodies will exert force on each other. Heretofore the theoretical predictions have never been experimentally substantiated; however, as early as 1896, experiments were conducted in an effort to detect predicted centrifugal forces on stationary bodies placed near large, rapidly rotating masses. The results of these early experiments were inconclusive, and little else in the nature of this type of work is known to have been conducted.

It is therefore another object of the present invention to set forth an operative technique for generating a measurable time-variant force field due to the gravitational coupling of relatively moving bodies.

In carrying out the present invention, means are provided to enable the relative rotational motion of a first member with respect to a stationary member positioned in close proximity thereto; the construction of one embodiment of the first member being such as to enable portions thereof to assume rotational motion about an axis perpendicular to the plane of said stationary member. The effect of the rotation of said member about the axis perpendicular to the plane of the stationary member is to establish a kinemassic force field in the nature of that referred to in the aforementioned copending application of the same inventor. The rotation of said member about the axis lying within the plane of said stationary member results in an undulation of the dynamic interaction field within said field members which in turn induces a secondary time-variant gravitational field in the surrounding space.

Accordingly, another more specific object of the present invention concerns a method of generating a non-electromagnetic force field due to the dynamic interaction of relatively moving bodies and for utilizing such force field to further generate a secondary gravitational field.

The foregoing objects and features of novelty which

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LETTER FROM GERALD J. ORLOWSKI

January 18, 1988

William H. Jefferys
Department of Astronomy
University of Texas
Austin, TX 78712

Dear Mr. Jefferys:

In reference to an article in the December 1987 Star Date news report concerning the Hubble telescope, you along with your associates indicated that the fine guidance sensors on the unit will point the telescope to particular regions of the sky where new things we have never known existed will be evident.

There is a direct relationship between what will be 'seen', and the present theories which will dictate what will be thought to be correct observations. In reading Star Date and other space magazines the prevailing attitude among astronomers seems to be that the farther they look into the heavens the more they transport their spirits away from earth's problems. This attitude puts mental blinders before their eyes and only by honestly evaluating what is happening here on earth will the true knowledge about the heavens become known.

We are inhabitants of the earth - a part of the total system and it is our responsibility to live on the planet to our highest level so as to blend with the rest of the system. One example, science has known for years that space visitors have somehow managed to travel here by distorting the gravitational field and converting it into usable energy utilizing what is called the Unified Field of Science theory. The issue is not whether life from other planets is a reality. We would be foolishly ignorant to think otherwise. Everytime we have exploded above ground nuclear bombs, space crafts numbering in the thousands were here within weeks of the explosion. This is known fact. Did we draw a parallel to their arrival and the explosions? No!

Science holds that nothing travels faster than the speed of light and it is therefore seen as almost an impossibiliity under the present theories. Because these theories are limited, we do not even think to investigate how life forms in other galaxies react to explosions here on earth. Are we so smug as to believe that we are it? Has it never occurred to anyone that we are being monitored as a direct threat to the universe and other beings? Indeed we are limited and this self-imposed limitation will be our undoing---unless.

The time is long overdue when science must ask in an attitude of true humbleness, "Where did we go wrong?" This is also the attitude astronomers need to take in order to properly view the heavens accurately. For the sake of argument, what if an above ground nuclear blast did distort the magnetic structural polarities of our solar system? How then could this action be detected as far away as another galaxy? Stretch your mind. Certainly as astronomers you can see the value of detecting systems in relationship to survival. An explanation as to how it is done can only be understood if you are willing to have an open mind. The enclosed disclosure is sent with the hope that the mental boundaries of present theories will unlock this area of ignorance.

The point in time when science swerved off course was when they started to determine the speed of light. Therefore let us begin a historical review from that point.

Surely you are familiar with the famous Michalson-Morley experiment which tried to measure 'upstream' and 'downstream' speeds of light. When light was not measured at different speeds, they stated that the conclusion was, a) light traveled independently of ether, or b) there there was no ether at all. By selecting the latter conclusion a stage was set for one of the gravest errors science ever made, determining the speed of light as an absolute with no variance.

Here the door was opened to relativity which is now a convenient mill-stone around the neck of mankind. When, if ever, science becomes fully aware of the gravity of this error they will be able to review all of the impossibilities that they have made impossible heretofore. One error to look at is that space crafts can never travel faster than the speed of light. That is all well and good if you are speaking of light as known to this part of the solar system and even then that is self-serving and not necessarily accurate. Why didn't they choose a), which is correct. Light does travel independent of space energy (ether). It would seem the very word ether caused part of the problem of selection. Had they thought in terms of an all encompassing word such as shall we say compressed magnetism, they could have explained the variations of energy in space as being more compressed within the earth system or less compressed when dealing with outer space.

The truth is, light particles from the sun and the compressed magnetism (let us say) of space are two completely separate energy sources. Don't close the mind - please. Although these energies exist in the same space they do not vie for each other's attention. They simply work around each other. By the compressed magnetism of space not slowing down light energy it was wrongfully assumed nothing was there and the wrong conclusion was drawn as to the speed of this light energy.

We must understand that the speed of light although constant is not limited to a given speed rate. To be a constant and maintain a specific speed rate are two entirely different thoughts. Light goes through an acceleration process as the pulsed particles not waves leave the sun and are slowed, depending on the other structures in their path. If charting of the heavens is to be done accurately it is important to broaden our understanding and learn that light in the universe is traveling at different speeds so as to maintain the balance needed for each system. In order to mentally grasp how your telescope will see light waves astronomers must consider that the particles that become light travel from the sun in the form of pulses at a rate, let's say four times faster than recorded light waves. As these particles make contact with other molecular structures (in this case the space telescope), they take on an elongated form and in so doing have slowed the action which is then viewed in a wave form to be observed.

With this back-drop of knowledge let us now take a look at how the intelligent life forms in other galaxies could possibly detect our explosions. In so doing we have set the stage for an understanding of the instrumentation and design needed for charting the heavens.

Astronomers must first come to realize that within the magnetic energy of the atmosphere there is a magnetic field that has been only minutely touched. For example, just as the electron has an

identifiable core structure which has been overlooked and is composed of magnetic molecular structures, so too different galaxies have signals that can be magnetically identified by their different magnetic pulse rates. The Hubble telescope will intercept light signals from various heavenly bodies, however, magnetic pulses that travel side by side with the light pulses will not be detected by your Hubble mirror because they simply pass through it. Please reread and reread this section.

With the development of compatible metal these magnetic pulses will be slowed and caused to take on an observable wave form in which to set-up their magnetic field. Enclosed you will find a patent on how to blend TiAlCo-B metal, a metal which welcomes magnetism. If a back-stop of properly arranged TiAlCo-B metal were located in a large plate directly behind your large mirror then the magnetic pulses going through your mirror could be captured. This is very important because it opens the door to categorizing the heavenly bodies according to their magnetic pulse rate which is far more accurate than brilliance identification.

Capturing magnetic energy from a given heavenly body poses a different kind of problem than simply holding a light beam in your mirror and then viewing it. The light beams stay in the spot where they hit the mirror, however, the pulsed magnetic particles when changing into a wave form create a magnetic field that quickly manifests throughout the metal being offered. It is very important therefore to limit the size of the field into which each pulsed magnetic particle can manifest in order to prevent a blending or flowing together of the captured magnetisms.

In viewing the enclosed unit note that it has a TiAlCo-B cover 7/16 inch thick which is the thickness needed to stop and capture pulsed magnetic particles. If the large plate behind your primary mirror were formed by using an assembly of TiAlCo-B pins, very thin, only 7/16" long, they could be held at their base by a nonmagnetic bonding agent and have the needed thin metal sensing wires attached to each. The pulsed magnetic particles would strike the top of the pins which are facing towards the heavens, turning them into mini-magnets. After causing each pin to manifest as an identifiable magnetic pole, this pole would then remain in place for detection.

When science learns how to capture the earth's compressed magnetism which they call gravity, they will find it manifests as a neutral energy. Magnetic particles, however, arriving here from different galaxies will exhibit a wide range of magnetic polarities depending on several factors. For exmaple, the distance they travelled, the composition of the original light source, the magnetic 'highways' they passed through to get here, etc. All have an important impact. After these magnetic pulses are captured, the question is, how does one make sure of the identity being given each for recording purposes. There is only one sure way and that is to first exactly reproduce the same magnetic pulse rate.

The energy system used in the Transmuter (see enclosed) will help to accomplish this. This unit might be installed along side the Hubble telescope and by properly using the neutral magnetic energy leaving this unit a new system for charting the heavens will be birthed. The neutral magnetic energy generated

by the Transmuter only leaves when being offered a polarity that it is drawn to. By controlling the pulse rate of the attract field and also varying the polarity of the attract field a pulse can be sent into the heavens which will match an incoming magnetic 'target'.

You will know that pulses are synchronized when you match the incoming magnetic energy and it arrives more intense at the large plate. The pulse numbers used can then be given to identify that particular target in the heavens. The outgoing pulse can be projected toward the heavens by using a TiAlCo-B 'dish' which might be mounted on the lead edge of your telescope centered behind the second mirror.

As a more advanced use of this system becomes technologically feasible a very accurately timed 'on' pulse can be sent out, then by a reversal of that polarity the magnetic 'track' will pull back energy from space along with the original magnetic charge. This then magnifies the viewing of the original heavenly objects. This will be helpful in observing distances and compositions more accurately.

The entire magnetic pulse detecting system becomes possible as the Hubble telescope is put into space. Magnetic pulses from the heavenly bodies are for the most part captured or deflected by the rim of pulsing neutrons identified as our ionosphere. For this reason this system would not work if located on planet Earth. It becomes obvious that if you have this type of instrumentation you also would be able to detect an explosion on a distant heavenly body.

In reviewing the sighting reports it is shown that none of the space travelers utilized the thrust principle as we on earth now do, therefore the lift principle visionaries of the past were quite accurate though discarded. The Lift System is the method of future travel in space. (See List.)

In the event you are not familiar with the lift principle, which seems almost impossible, here is an oversimplified explanation. Once the mind is clear to accept that gravity is compressed magnetism and all things are caused to move toward earth by two separate forces, a push and a pull, then the lift principle is easily explained. With the proper rotational movement on the exterior of a space craft and the metal rotating exterior being given the proper magnetic pulse rate, the downward movement caused by the compressed magnetism (now called gravity) is reversed and the rotating craft is attracted upward, lifting the vehicle. The ether of the heavens becomes the power source to power space crafts. Now do you see how damaging it was to say no such energy source exists? By refusing to "see" our future lies in a time warp of backwardness while the rest of the planetary system is delayed with their progress. There is an interactionary dependence and certainly they are not seeking to remain where they are. Time is precious and if the shuttle engines are going to cause delay after delay perhaps your group would like to investigate a method to lift your telescope into orbit.

Our Corporation has spent a considerable amount of time designing a craft to lift off this earth and the drawings are now complete.

One of the purposes of this letter is to further our desire to team up with your group and make this space craft a reality. Individual corporations in the past have been shut down by government agencies who have called this kind of project "top

secret". What we would count on from your group is the proper ground work for creating a strong foundation of public support.

There is a vast amount of information that we desire to share that can be utilized for the benefit of the future of mankind which involves of course joint teamwork. We would like an opportunity to explore this possibility and therefore have taken the liberty to enclose a non-disclosure agreement.

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski

NON-DISCLOSURE AGREEMENT

You have expressed an interest in participating in a joint teamwork arrangement whereby we would work together to construct and fly a space vehicle utilizing the lift principle. As you are aware, this unit is our new development in which Energy Aerospace Industries Inc. have valuable proprietary rights, and it is essential that trade secrets and confidential information concerning this vehicle be disclosed to other parties only under appropriate confidentiality provisions. As we are currently an active Arizona corporation, our corporate direction is to manufacture (or have manufactured) and market this space ship, it is necessary therefore that I disclose to you how the vehicle functions, the details of which are outlined in exhibit A attched. During the interim period between now and the time the space vehicle is ready for flight, it is necessary that the trade secrets and confidential information concerning this vehicle not be used or disclosed.

Accordingly, whereas we are willing to disclose to you our confidential information and trade secrets concerning the space vehicle, we propose that subsequent disclosure to other parties be upon the following conditions:

1. During the interim period referred to above, you agree to maintain in confidence and not to disclose to others or use without written consent from E.A.I., Inc., any trade secrets or information or data of a confidential nature received by you relating to said space vehicle. This obligation on your part shall not apply to trade secrets, information or data which is already known to you or which is or becomes part of the public domain through sources other than yourself.

2. Notwithstanding the provisions of Section 1 above, you shall have the right to disclose selected portions of such trade secrets, or confidential information for soliciting capital investment; provided however that such disclosure shall be made only to such persons who first shall have signed a confidentiality agreement.

3. If in the course of any work which you do during the construction of this space vehicle, any discoveries, inventions or improvements are made by you, relating to the subject matter of our disclosure, you agree to assign to E.A.I. Inc. all right, title and interest in any such discoveries, inventions or improvements.

If the foregoing is acceptable to you, please sign in the space marked "ACCEPTED".

ACCEPTED: (1 or more signatures)

_____

_____

_____

_____

DATE: _____

Sincerely,

Gerald J Orlowski

Gerald J. Orlowski
President

EXHIBIT A

1. The outer shell of the Space Ship is made of a metal that welcomes magnetism, has the strength of steel, resists disruptive seaming under high heat conditions and is light in weight. (See patent). When this metal is poured using the exacting time factor and sequence of pouring the metal becomes space ship metal.

2. The outer shells of the craft rotates with two separate plates which capture compressed magnetism which travels as pulses until they strike the rotating plates. This energy then takes on a wave form and manifests as what has been found to be neutral magnetic energy in and outside of the turning metal. This energy is now circuited into the cabin to be used to drive the magnetic motors which are called the primary engines. Only a portion of this energy is drained off, the remainder is given polarities that manifest as individual "poles" outside the plate as the plate rotates.

3. The primary engines which turn the plates are driven by attracting the captured neutral magnetic energy, giving it the needed polarities for rotation and then continue to rotate the plates at an exacting controlled amount of revolutions per minute. These primary engines do not have insulated copper coils to create magnetic fields because the magnetic flowing current is used, as is, manifesting as magnetism.

4. Also being disclosed will be the exact plate speeds and their variations between each other because an understanding of the wiring layout and pulse sequence to the wires located under the plates is critical to creating the needed magnetic pulsing.

5. There are many and varied reasons for different 'holes' being drilled through the plates, also parts to insulate form the magnetic flow, types of fasteners, plus the plate shapes after pouring along with many assembly details.

6. The cabin control system for guiding the craft through space includes the system for changing polarities on the turning plates continuously. The needed pulses - how they are wired to cause many thousands of pulses per second.

7. The system for monitoring the magnetic plate polarities is of paramont importance because the selection of plate polarity determines in which direction the craft will be attracted determined by the different magnetic 'highways' in space.

8. Size and type of permanent magnet placement on the exterior of the stationary cabin which are swiveled as needed to contact the magnetic rings that feed the pulse wiring system. These magnets swivel by hand operated cables and automatic controls. Many safety features are incorporated to prevent damage to these magnets which make continuous contact to magnet contact rings mounted to the underside of the rotary plates.

9. Also disclosed will be a method for creating an on-board gravity field which is imperative. Basically this involves taking charged magnetic energy and repelling it back into pulse form from ceiling to floor, recreating the gravity we now use. Everything moves to our earth by two separate forces, a pull and a push. One force cannot manifest without the other although science thus far refuses to understand this, therefore they negated it.

10. Also disclosed is the built-in ballast systems which allow the craft to quickly pitch up or down for directional guidance.

11. Also disclosed is the design of the central cabin area that serves as an engine room with the needed support systems to allow correct smooth rotations for the upper and lower turning plates.

12. Also disclosed is the start position which is powered by secondary motors driven by a separate power source which consists of properly spaced permanent magnets that respond by generating and recycling their own magnetic/electrical field. These magnets are used with piston movement to create rotations.

Many other items will be disclosed that are not listed here in Exhibit A.

United States Patent [19]

Orlowski

[11] **Patent Number: 4,645,644**

[45] **Date of Patent: Feb. 24, 1987**

[54] **METAL ALLOY**

[76] Inventor: Gerald J. Orlowski, 6702 E. Turquoise Ave., Scottsdale, Ariz. 85253

[21] Appl. No.: 812,174

[22] Filed: Dec. 23, 1985

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 734,578, May 13, 1985, abandoned.

[51] Int. Cl.[4] C22E 30/00

[52] U.S. Cl. 420/587; 420/589

[58] Field of Search 420/580, 587, 588, 480, 420/532, 535

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Primary Examiner—Christopher W. Brody

Attorney, Agent, or Firm—Allegretti, Newitt, Witcoff & McAndrews, Ltd.

[57] ABSTRACT

A new alloy containing aluminum, chromium, copper, magnesium, manganese, zinc, titanium dioxide, and cast red brass is disclosed.

2 Claims, No Drawings

METAL ALLOY

BACKGROUND OF THE INVENTION

This application is a continuation-in-part of copending patent application Ser. No. 734,578, filed May 15, 1985 now abandoned.

FIELD OF THE INVENTION

The present invention relates to metal alloys.

BACKGROUND OF THE INVENTION

Though various metal alloys are known in the art, there is a need for a metal alloy that is strong and yet is light in weight. There is also a need for a metal alloy that is nonmagnetic and that can sustain high heat without the occurence of disruptive seaming. Additionally, there is a need for a metal alloy capable of coating other metals and thereby imparting added strength and resistance to disruptive seaming.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a new metal alloy that is extremely strong and yet light in weight.

It is a further object of the present invention to provide a new metal alloy that is nonmagnetic and is resistant to disruptive seaming under high temperature conditions.

It is an additional object of the present invention to provide a new metal alloy that adds strength and resistance to disruptive seaming to other metals that are coated with it.

It is a specific object of the present invention to provide a metal alloy consisting essentially of 27–32% aluminum, 4–9% chromium, 12–17% copper, 8–13% magnesium, 6–11% manganese, 10–14% zinc, 3.9–4.1% titanium dioxide, and 11–16% cast red brass by weight percent of the total weight of the resulting alloy. The cast red brass used consists essentially of 78–97% copper, 1–7% tin, 1–7% lead, and 1–7% zinc by weight percent of the total weight of the resulting cast red brass. Other elements such as iron, antimony, nickel, phosphorus and sulfur may be present in the cast red brass in amounts of less than 1% by weight.

Further objects and embodiments of the present invention will be set forth in the following description of the preferred embodiments and claims.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

EXAMPLE 1

A bar of the inventive metal alloy measuring 13" by 39" by ¼" is prepared in the following manner. Preferably, a primary melting furnace and a secondary holding furnace are initially purified by heating the melting pots in these furnaces to approximately 2300° C. The temperature of the primary melting furnace is then adjusted to the approximate melting point of the first metal to be melted. After the first metal is melted in the primary furnace, this molten metal is transferred to the secondary holding furnace. The temperature of the melting pot in the first furnace is then adjusted to the approximate melting point of the second metal to be melted. After the second metal is melted in the primary furnace, the second molten metal is transferred to the secondary furnace where it is mixed with the first molten metal. With the addition of each new metal, the temperature of the melting pot in the secondary furnace is adjusted such that the mixture of metals contained therein remains molten. The molten metals in the melting pot of the secondary furnace should also be stirred continuously.

The above process of melting additional metals in the primary furnace and then transferring the molten metals to the secondary holding furnace continues until all of the metal constituents have been melted and added to the melting pot of the secondary furnace. At this point, the titanium dioxide is then melted in the primary furnace and added to the melting pot in the secondary furnace. After the titanium dioxide is added to the second melting pot, the resulting molten alloy mixture is continuously stirred for approximately one minute. The temperature in the melting pot of the secondary furnace is then raised to between approximately 1850°–2000° C. in order to eliminate any impurities, which will form a slag on the top of the melting pot. These impurities should be removed immediately prior to pouring the molten alloy. The resulting melted mixture is then poured into an appropriate mold, such as a sand mold, and is allowed to slowly cool, preferably via air cooling, until the alloy has completely solidified.

To prepare the above metal bar, the following components are first melted in the primary furnace and added to the melting pot in the secondary furnace in the following order.

TABLE 1

Component	Weight (lbs.)	Weight %	Melting Point (°C.)
Magnesium	3.85	10.8	651
Zinc	4.28	12.0	419.4
Aluminum	10.59	29.7	660.2
Manganese	3.17	8.9	1244
Copper	5.24	14.7	1083
Cast Red Brass	4.85	13.6	1800
Chromium	2.25	6.3	1857–1877
Titanium Dioxide	1.43	4.0	1660–1670

The cast red brass is characterized by the following composition.

TABLE 2

Component	Weight %
Copper	84.15
Tin	4.40
Lead	5.42
Zinc	5.13
Iron	0.17
Antimony	0.12
Nickel	0.58
Phosphorus	0.007
Sulfur	0.019

The weight of the resulting bar is approximately 35 pounds. Up to one gram of Red Dye Number 40 may additionally be added to the molten alloy mixture. The percentages in Table 1 above encompass any losses of metal due to vaporization, though they are based on the assumed weight percentages of pure metal. In practice, impure sources of the metal may be used having purity level ranges as low as 68%. The weight percentages noted above in Table 1 for the metal components may be varied by approximately plus or minus 2%. The weight percentage for titanium dioxide may be varied by only plus or minus 1/10th of 1%. The resulting metal alloy is identified by the trade name "TiAlCo-B".

The inventive metal alloy may be used in its solid state for the purposes and by the methods generally known in the art of metal alloys. In its molten state, the inventive metal alloy may be used to coat other metals. For this purpose, the inventive metal alloy should have appropriate flow properties, which are achieved by heating the alloy to approximately 2000° C. and then allowing the molten alloy to cool to approximately 1850° C. before coating. The coating procedure can be facilitated through the use of an applicator, for example, an instrument similar in construction to a conventional paint roller, that can withstand the high temperatures involved. After coating is completed, the coated metal should be quickly chilled in ice water and then baked in an oven at an appropriate temperature for an appropriate period of time, as is well known in the metal coating art.

It is to be understood that the above description of the preferred embodiments emphasizes only certain embodiments. Other embodiments not specifically disclosed may fall within the spirit and scope of the present invention as set forth in the following claims.

I hereby claim as my invention:

1. A metal alloy consisting essentially of 27–32% aluminum, 4–9% chromium, 12–17% copper, 8–13% magnesium, 6–11% manganese, 10–14% zinc, 3.9–4.1% titanium dioxide and 11–16% cast red brass based on the total weight of said alloy, said cast red brass consisting essentially of 78–97% copper, 1–7% tin, 1–7% lead and 1–7% zinc based on the total weight of said cast red brass.

2. A metal alloy consisting essentially of 29.7% aluminum, 6.3% chromium, 14.7% copper, 10.8% magnesium, 8.9% manganese, 12.0% zinc, 4.0% titanium dioxide, and 13.6% cast red brass based on the total weight of said alloy, said cast red brass consisting essentially of 84.15% copper, 4.4% tin, 5.42% lead, 5.13% zinc, 0.17% iron, 0.12% antimony, 0.58% nickel, 0.007% phosphorus and 0.019% sulfur based on the total weight of said cast red brass.

* * * * *

STATEMENT OF NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mr. Chairman, my name is Morgan Dubrow, Chief Engineer of the National Rural Electric Cooperative Association. NRECA is the national association of over 1000 rural cooperatives which supply central station electricity to some 25 million people in the rural areas of 46 states. NRECA thanks this Subcommittee for its leadership and the Congress for blocking the sale of federal power marketing administrations (PMAs), federal dams and transmission systems.

NRECA supports the F.Y. 1989 budget request for the Corps of Engineers, the Bureau of Reclamation, the Department of Energy's PMAs, and other DOE energy programs, including nuclear projects. NRECA emphasizes the need for:

- Funding for the 8 new construction starts by the Corps of Engineers.
- $59.4 million for the Central Valley Project, California.
- $32.0 million for the Richard B. Russell Dam, Georgia-South Carolina.
- $26.8 million for Garrison Irrigation Project, North Dakota.
- $6.4 million for Harry S. Truman Dam and Reservoir, Missouri.
- $220.5 million for Central Arizona Project, Arizona.
- $151.5 million for the Central Utah Project, Utah.
- $7.8 million for the Animas La Plata Project, Colorado.
- $27.4 million for Columbia Basin, Chief Joseph and Bonneville Projects.
- $25.0 million for the North Loup Division, Missouri Basin Project, Nebraska.
- $500 thousand for Atmospheric Water Resources Management.
- $32.1 million for Dallas Creek and Dolores Projects.
- $5.0 million for Boulder Dam Project, Arizona-Nevada.
- $183.2 million for the operation and maintenance budget of the Bureau of Reclamation.
- $624.0 million for the 5 federal power marketing agencies.
- $836.0 million for nuclear programs.
- $35.0 million for modular high-temperature gas reactors.
- $525.0 million for Clean Coal Technology.

At our 46th annual meeting in New Orleans in February 1988, our members again unanimously passed resolutions supporting appropriations for water resource and hydroelectric projects throughout the United States.

Opposition to Sale of Power Marketing Administrations

We strongly oppose the President's 1989 budget proposal to sell the Alaska Power Administration and any request to study the sale of the Southeastern Power Administration. The nation's rural electric cooperatives (over 600 purchase federal power) are dependent on the purchase of federal power at cost to remain competitive, and support the debt-burdened rural economy.

Construction for the Bureau of Reclamation

The Administration has recommended funding for the Bureau of Reclamation construction program of $698.2 million which will permit the timely completion of major water resource projects. Also, we strongly support the $49.0 million for the safety of the dams program.

New Construction for the Corps of Engineers

We strongly support the 8 new starts and 20 new surveys in the Corps of Engineers' budget request.

Central Valley Project

We support the appropriation of $59.4 million in F.Y. 1989 for the Central Valley Project. The Auburn-Folsom South Unit has a potential of 300 MW of hydroelectric power, with the possibility of an additional 400 MW for pumpback units. We support the Bureau of Reclamation's efforts in working with the American River Authority and the Auburn Dam Task Force to develop cost-sharing and a firm proposal for Auburn Dam.

Richard B. Russell Dam

Funds in the amount of $32.0 million are needed in F.Y. 1989 for continued construction of the Richard B. Russell Dam Project on the Savannah River between Georgia and South Carolina. It will provide 600 MW of needed hydroelectric power, 300 MW base load and 300 MW of pumpback power.

Garrison Irrigation Project

We support funds in the amount of $26.8 million in F.Y. 1989 for continued construction of McClusky Canal slide repair, New Rockford Canal Reach 2, and Kraft Slough. Funding is also included for municipal, industrial and rural water development, fish and wildlife and recreation facilities.

Harry S. Truman Dam and Reservoir

We support the appropriation request for $6.4 million in F.Y. 1989 to continue construction at the Harry S. Truman Dam and Reservoir and urge the use of the full hydro potential at the project.

Central Arizona Project

We urge the Subcommittee to appropriate $220.5 million required in F.Y. 1989 to continue construction of the Central Arizona Project which is vital for the water supply to Phoenix and Tucson, Arizona.

Animas La Plata Project

We request an increase to $7.8 million in F.Y. 1989 to enable the Bureau of Reclamation to expedite the design, an increase of $5.8 million over the $2.0 million OMB request for this project which was authorized some 20 years ago.

This project is needed to provide potable water to the Ute Tribes. Building the project would implement the agreement between the Indians, the Federal Government and the States of Colorado and New Mexico to settle long-standing water rights. Further, 38 percent of the project is to be cost-shared by non-federal interests. NRECA again recognizes the dire need for the project. We urge that it be repaid over a 50-year period, as are other Colorado River Storage projects. Nevertheless, we fully support the project and request the Subcommittee to provide the full $7.8 million to begin construction.

Central Utah Project

We request support of the $151.5 million F.Y. 1989 budget request for the Bonneville Unit of the Central Utah Project. Most of these funds will be used for work on highway relocations, land acquisition, construction of Stage II of the Jordanelle Dam and Reservoir, and work on the Synar Tunnel of the Diamond Fork Power System.

Columbia Basin and Other Pacific Northwest Projects

We support F.Y. 1989 appropriations of $18.3 million for the Columbia Basin Project, including continued drainage work and installation of new supervisory control and data acquisition system for the Third Power Plant of Grand Coulee and modifications for fire protection; $6.6 million for Chief Joseph Power Plant; and $2.5 million for the Second Power Plant at Bonneville Dam.

Atmospheric Water Resources Management

We recommend that the F.Y. 1989 appropriations include $500,000 to continue the cloud seeding technology being developed by the Bureau of Reclamation to increase water supplies and hydroelectric generation from increased stream flow.

Dallas Creek and Dolores Projects, Colorado

We support the appropriation requests of $3.7 million for Dallas Creek, and $28.4 million for Dolores Projects.

North Loup Division, Missouri River Basin Project, Nebraska

An increase of $10.0 million should be added to the $15.0 million F.Y. 1989 OMB request for this project.

We respectfully urge the Subcommittee to support Congresswoman Virginia Smith's efforts to obtain release of the $1.0 million impounded by the Office of Management and Budget (OMB) to initiate construction on Davis Creek Dam. It is an integral part of the originally authorized project. We believe OMB's action is an unacceptable precedent and strongly support Congressional efforts to initiate construction of this project by requiring restoration of $1.0 million.

We urge the Subcommittee to add another $10.0 million which could be utilized to carry on the design and contract award for the Davis Creek Dam.

Boulder Dam Project

We urge the appropriation of $5.0 million in F.Y. 1989 for beginning construction to make Boulder Dam safe for visitors. These funds are needed to provide a safe environment for the tens of thousands of people who visit this dam and power generation project, one of the eight engineering wonders of the modern world. The dam is accessed by a steep narrow winding road which is a major highway. Traffic is a constant danger to visitors who must park along the roadway. This road is often used by large commercial trailers and other vehicles travelling between Nevada and Arizona. These funds would be used for roadway realignment, parking facilities and tour galleries.

Bureau of Reclamation O&M Budget

We note an increase to $183.2 million in the Bureau of Reclamation's O&M budget. This is a welcome increase, as adequate operation and maintenance of projects remain a matter of the highest priority in order to meet contractual commitments for delivering water and power benefits to consumers. More funds will be needed to catch up with deferred maintenance, carrying out an ongoing 5-year scheduled preventative maintenance program. We support this $32.0 million increase in the O&M budget, of which some 60 percent of the appropriated funds are repaid by users in the first year.

Federal Power Marketing Agencies

NRECA supports the $624 million for F.Y. 1989 appropriation request for federal power marketing agencies. The F.Y. 1989 requests by agencies are: $299.0 million for the Western Area Power Administration, $36.0 million for the Southeastern Power Administration, $15.0 million for the Southwestern Power Administration, and $3.0 million for the Alaska Power Administration. We also support the Bonneville Power Administration's (BPA) $271.0 million budget funded through its self-financing revolving fund procedures.

We support the third 500-kV line for BPA. We ask the Subcommittee to request the Office of Management and Budget to release the $25.0 million impounded in F.Y. 1988 and approve $125 million in new borrowing authority in F.Y. 1989. This will enable BPA to meet its financial obligations to the Treasury by providing additional capacity to market more surplus power in California.

Nuclear Programs

Our association has resolutions supporting nuclear power and nuclear research programs. We request the Subcommittee to provide funds for the F.Y. 1989 budget request of $836.0 million for nuclear programs. Funds are vitally needed to continue development of advanced nuclear technology for improved safety, greater efficiency, reactor standardization and other improvements. This advanced technology is essential for continued development and maintenance of a viable nuclear industry and to support the ongoing nuclear power program which provides about 18 percent of our nation's electrical needs. We urge the Subcommittee to provide all the funds requested for the following programs:

- $351 million for nuclear energy research and development, including $28.6 million for light water reactors and $61.2 million for advanced reactors.
- $449.0 million for nuclear waste fund.
- $35.0 million for the modular high-temperature gas reactor.

Modular High-Temperature Gas Reactor

We thank the Subcommittee for its continued support of the Modular High Temperature Gas Reactor (MHTGR). NRECA is an active member of Gas-Cooled Reactor Associates (GCRA) that supports the development of the MHTGR. We join GCRA in recommending a F.Y. 1989 level of $35.0 million. The MHTGR offers passive and inherent safety that excludes the possibility of core meltdown, the need for emergency evacuation plans, and assures economic nuclear power in small modular increments, which can be factory fabricated. We believe this technology will help reestablish a new political consensus favoring nuclear power. We see the possibility of deploying small MHTGR on some NRECA systems. Further, our experience in working with Third World countries is that they also need small, safe, reliable power sources.

Clean Coal Technology

President Reagan has called for a 5-year $2.5 billion clean coal funding program to expand the number of commercially available technologies for reducing sulfur and nitrogen oxides emissions from coal-fired power plants, as agreed to by President Reagan and Canadian Prime Minister Mulroney. We support the funding of this program through the Department of Energy that includes the specific request of $575.0 million for F.Y. 1989.

I thank the Subcommittee for the opportunity to present this testimony.

STATEMENT OF KMS FUSION, INC.

I. Summary

The Inertial Confinement Fusion (ICF) program has made tremendous progress in the past year. Confidence in the ICF approach to harness fusion energy is very high. DOE is currently planning the development of a Laboratory Microfusion Facility (LMF). Before an informed decision can be made on the LMF, there remains three years of intensive research and development. The 1989 Administration budget proposal of $155 million for operating funds is inadequate to permit timely completion of the tasks remaining, especially in the fields of advanced driver development and target development. KMS Fusion urges that operating funds for the ICF program be increased to permit a level of activity consistent with the goals of the ICF program. To support the target physics experiments at the several laboratories, KMS Fusion requests operating funds of $16.8 million for 1989. This is $2.4 million above the President's $14.4 million operating funds request for KMS. This increase is needed to enable KMS to meet its obligations to the other participants in the ICF program, particularly in the area of target fabrication and development.

II. The Need to Increase the FY89 ICF Budget Request

KMS respectfully urges Congress to increase ICF operating funds. The Administration request for a 3% increase for FY89 to $155.5 million (up from $151 million in FY88), is not adequate.

KMS itself requires additional resources to enhance its capabilities in target fabrication and development to support the national laboratories and other ICF participants. The national laboratories also require additional resources to address their mission requirements.

Increased funding will:

- Provide KMS with the resources necessary to support the target fabrication and development requirements of the ICF Program.
- Provide the basis for an intelligent decision on driver selection for the Laboratory Microfusion Facility.
- Provide for the cost effective operation of NOVA.

- Provide for Halite/Centurion experiments.

It would be short sighted to ignore the needs of the ICF Program for additional resources just when enormous progress has been made and when the need for an LMF is becoming recognized from both a military and an energy standpoint. The increase suggested by KMS is badly needed and will enable the ICF Program to meet its milestones and objectives.

III. Recent Progress in the ICF Program

With target interaction experiments scheduled to begin at LANL and SNL before the end of 1988, both of these facilities need a great deal of additional target support from KMS.

During 1987, the ICF program made tremendous strides in understanding the physics of target compression. The major goals set for ICF by the Happer Committee in 1986 have been met ahead of schedule. The Nova facility at LLNL has successfully addressed several key issues related to the classified, radiation-driven target concept. These issues include uniformity of illumination and the production of stable, high convergence capsule implosions. The highly classified Halite/Centurion program has also shown equally impressive results.

The success of the laboratory experiments has been the result of years of significant developments in several areas, from advanced diagnostic instrumentation capable of resolving neutron images of the burning fuel, to high resolution (in both space and time) of x-rays emitted by hot plasmas, to the production of complex, precision fuel capsules. Most of these advancements are the result of collaborative efforts among the program's participants.

Driver development activities are beginning to yield results at both LANL and SNL. The Aurora KrF laser development project at LANL has demonstrated production and control of the multiple laser beams required for efficient operation. Impressive results have also been achieved on PBFA-II, the light ion driver at SNL. SNL has made major improvements to the electrical portions of PBFA-II and SNL has demonstrated production and focusing of ion beams to surrogate targets of relevant dimensions.

IV. Development of the Laboratory Microfusion Facility

The successes of the past few years have established the basis for the ICF Program's need to build a cost-effective laboratory thermonuclear fusion capability. As a result, plans are being developed which can lead to the establishment of an LMF in the next ten years. While research remains to be

done before a construction decision can be made, the time is at hand to begin planning such a facility. The near-term usefulness of an LMF is to support military applications, principally in the areas of nuclear weapons physics and as a device to simulate the effects of nuclear weapons. Studies by the ICF program's participants and the nuclear weapons communities have concluded that a driver with several megajoules of energy can produce target gains of 10 to 100 which would produce useful outputs for military applications. These "single-shot" experiments would be conducted at a rate of about one per week. The availability of such a facility would be critical in the event of a comprehensive or limited test ban treaty; the facility would continue to provide information for weapons development, as well as help retain a qualified cadre of nuclear weapons designers at the national laboratories.

Experiments which are significant to the nuclear weapons program will generally require obtaining the target's maximum yield. In maximizing yield from the target, the LMF would also provide invaluable information about the energy option for ICF. Extensive research on the questions of materials for a fusion reactor and the economics of power production would also be conducted on the LMF.

V. KMS Fusion's Contributions to the ICF Program

KMS Fusion, located in Ann Arbor, Michigan, is the only private participant in the ICF program. The Company has played a major role in the development of ICF, and holds the fundamental patent on the process. Fusion research began at KMS in 1971, and in 1974 KMS achieved the world's first successful demonstration of laser-driven compression of fuel to produce thermonuclear reactions. Since then, KMS has contributed many other innovative "firsts" to the program:

- KMS was the first to carry out experiments with short wavelength laser light, a technique subsequently adopted worldwide.

- KMS pioneered the use of frozen (cryogenic) fuel in ICF targets, a complex technique that will be incorporated in all advanced facilities.

- In 1981, KMS scientists demonstrated that cryogenic targets performed better than room-temperature, gas-filled targets.

- In 1986, experiments at KMS combined the use of cryogenic fuel in plastic shells with precise control of the laser pulse's temporal shape to further improve target compression.

- KMS played a pivotal support role in the demonstration of the first laboratory x-ray laser. In late 1985, LLNL announced the first

successful x-ray laser experiments. Prior to this landmark achievement, KMS and LLNL scientists performed an extensive series of experiments in Ann Arbor to characterize the dynamics of their target designs. KMS helped develop high-resolution spectroscopic information from which LLNL scientists were able to demonstrate the x-ray laser's performance.

VI. The Current Role of KMS Fusion

Our main role at KMS is to provide support to the major ICF facilities at the DOE national laboratories. This includes target technology development, target fabrication and deliveries to the facilities, diagnostic instrument development, and research into the physics of laser-target interactions. These activities and precision experiments are vital to completing the data base on radiation-driven ICF (the Nova Project at LLNL), leading to an informed driver decision in the early 1990s. With the impending activation of the Aurora facility at LANL and PBFA-II at SNL, there are increased requirements for target technology support, instrument development, and experiments support.

The Company is the major supplier of targets and target technology to the ICF program. KMS holds most of the patents on target technology for ICF. Currently, target fabrication and development comprises more than half of the Company's ICF activities. In 1985 and 1986, record neutron yields were obtained in experiments conducted at UR/LLE, the University of Osaka Institute for Laser Energetics in Japan, and at LLNL. Both the UR/LLE and LLNL experiments used target capsules supplied by KMS. In the Japanese experiments, the targets were made using techniques patented in Japan by KMS. Recent density claims by UR/LLE are based on experiments utilizing cryogenic targets and apparatus originally supplied by KMS.

The Company continues to stress the importance of the development of advanced fuel capsules for the next generation experiments. These targets involve several techniques developed at KMS, including cryogenic fuel handling, the application of new target materials, and the metrology (characterization) of the completed targets.

KMS Fusion has contributed greatly to the development of sophisticated diagnostic instrumentation for fusion experiments:

- In 1983, the Company developed a unique multi-frame holographic interferometer for visualizing the "blow off" of material from the surface of a target. This instrument, the world's fastest movie camera, is capable of providing stop-action images in 20 trillionths of a second. Up to four images can be recorded during each experiment.

- During the 1986 cryogenic implosion experiments, we implemented the technique of x-ray backlighting, in which an additional laser beam simultaneously strikes a metal target in close proximity to the imploding target, producing an intense but short burst of x-rays. These x-rays pass through the imploding target and produce a time-resolved record of the implosion history.

KMS Fusion operates a highly productive laser-target experiments facility. The Chroma laser is a two-beam neodymium-glass system capable of producing up to 800 joules of infrared light with a one billionth of a second duration. This energy can be efficiently converted to visible light, which interacts more favorably to a fusion target. The laser is equipped with a pulse stacker, which allows a variety of pulse shapes to be synthesized; this is important for determining the optimal conditions for compressing the fuel. The laser beams may be directed into either of two experimental areas. This allows us to be setting up an experiment in one area while performing target experiments in the other. We have the capability to perform a wide variety of experiments, from spherical implosions, to irradiations on flat targets, to complex classified geometries.

Due to funding limitations in 1988, we are unable to meet all of the requests from the three national laboratories. We expect the requests to grow substantially. Dollars spent at KMS are highly productive investments which benefit all the program participants.

STATEMENT OF GAS-COOLED REACTOR ASSOCIATES

Mr. Chairman and Members of the Subcommittee, my name is Richard F. Walker, and I am Chairman and CEO of the Public Service Company of Colorado and Chairman of Gas-Cooled Reactor Associates (GCRA), the utility/user organization that supports the development and commercialization of the gas-cooled reactor.

For the past four years, the focus of the U.S. gas reactor development effort has been on the Modular High Temperature Gas-Cooled Reactor (MHTGR). Thanks to the sustained Congressional support and the dedicated support and conviction of the Program participants, the MHTGR Program is developing an attractive, second generation nuclear power system that is responsive to the needs of utilities and those of the Nation as a whole. The steadfast support of this Subcommittee for the MHTGR Program is respectfully acknowledged and we urge your continued support.

Overall, support for the MHTGR continues to grow as the need for a second generation of nuclear power and the impressive capabilities of the MHTGR are increasingly recognized worldwide. The bases for and the representation of the broad utility/user support for the MHTGR is reflected in this year's Joint Utilities' Statement on the MHTGR Program. The 29 utility executives who signed the Statement represent an impressive cross section of the U.S. utility leadership and a significant fraction of the Nation's generating capacity. In the current period of nuclear aversion throughout the utility industry, our Joint Statement is considered a significant input to the Congressional Committees with oversight responsibility for the MHTGR Programs at the DOE and the NRC. A copy of the Joint Statement is attached herewith for consideration of inclusion in the Congressional Record.

For added emphasis, I would like to expand on the key expected benefits of the MHTGR that are responsive to the pervasive issues that confront nuclear power expansion in the U.S. These benefits may be summarized as follows:

- Improved public acceptance associated with the inherent and passive safety features that are demonstrable and transparently evident.
- Eased licensing and siting associated with the inherent and passive safety features and the resultant safety margins that provide a technical basis for eliminating public evacuation and sheltering requirements.
- Reduced financial risks and improved investor acceptance that result from the "modular" expansion capability to meet load requirements and financing constraints plus the "inherent" investment protection against equipment malfunctions and operator error.
- Reduced capital and operating costs plus enhanced reliability/availability associated with the elimination of most safety-related engineered components and systems.
- Reduced field labor, construction schedule and cost uncertainties plus enhanced standardization and learning benefits due to the large content of shop fabrication.
- Simple fuel management without the need for recycle or consideration of nuclear proliferation policy issues.
- Modest resource demands to complete the development effort.

However, "expected" benefits must be proven with a convincing prototypical Lead Project. As GCRA and the MHTGR Program participants have consistently maintained, our goal is to implement such a Lead Project before

the turn of century in order to assure the MHTGR option when major capacity expansions are currently projected. To accomplish this goal, three distinct but related efforts are involved. The first effort deals with the first-of-a-kind design, technology and licensing development risks which are being addressed through the ongoing DOE MHTGR Program. The second effort addresses the economic risks of plant costs and performance. The third effort involves the formation of a capable vendor entity that will financially support and deliver the initial plant as well as provide follow-on commercial plants and services.

With regard to the first-of-a-kind development, substantial progress has been made during the past year. The conceptual design has been completed and assessments indicate that the MHTGR design can meet the challenging utility/user requirements established by GCRA. In our view, there are no technical uncertainties that threaten the feasibility of the MHTGR concept. Our confidence in this statement draws from the continual involvement of GCRA staff in the development programs and the periodic utility reviews and assessments. For example, as part of the culminating assessments of the MHTGR conceptual design, GCRA conducted a week-long utility design review with emphasis on operation, maintenance and the management support requirements for owning an MHTGR plant. The review panel consisted of thirteen senior utility representatives with over 350 years of cumulative LWR and gas-cooled reactor experience. Included were past plant supervisors of the Peach Bottom I HTGR plant and current managers from the Fort St. Vrain HTGR plant and the Heysham Advanced Gas Reactor Plant in the U.K. Such utility reviews assure that the MHTGR development effort will produce a product that meets utility requirements plus reflect the utility commitment and interest in the MHTGR development process.

The most commanding aspect of the MHTGR Program during the past year has been the support for NRC's review of the MHTGR design and related safety analysis and licensing criteria. While the schedule for culminating this effort has slipped from January 1988 to the May/June timeframe, the review has generally confirmed the passive safety features of the MHTGR and has established an effective dialogue between the MHTGR Program and the NRC. The timely resolution of the remaining issues and issuance of a final Safety Evaluation Report by the NRC is crucial to the ongoing Program.

The second effort involves proof of the MHTGR's economic viability. In cooperation with Program participants, GCRA has been supporting the development of a Project initiative to build and operate a prototypical MHTGR plant. Through ongoing Project development efforts, a definition of the requirements and scope, a detailed estimate of the costs and schedules, an arrangement for government/industry cost sharing, and the overall benefits and limitations of a cooperative MHTGR Project are being established. Through this effort, an optimal approach for an initial Project has evolved. It is based on an initial commitment for a one-module prototype plant that provides performance results for the subsequent expansion to a four-module lead plant which will have long-term commercial value. Ongoing Project activities are focused on identifying and developing multiple sites and applications as options for such an initial project in parallel with the development of cost/risk sharing arrangements as the bases for an MHTGR Project initiative and proposal for Government support.

The third effort has advanced on two fronts during the past year. Within the DOE MHTGR Program, the corporate team of General Atomics, Combustion Engineering and Bechtel are functioning as a vendor entity to advance the preliminary design of the MHTGR nuclear island. In addition, cooperative vendor efforts are under way with Siemens/Interatom, the MHTGR pioneer from the Federal Republic of Germany, to support a Project initiative in the U.S. These combined efforts are expected to culminate in a strong MHTGR vendor entity that is crucial for the Project initiative effort and the delivery of subsequent MHTGR commercial plants.

Also crucial to the furtherance of an MHTGR Project initiative is stable Government support. GCRA has consistently recommended a phased commitment structure for the advanced reactor programs with each phase progressively

mandating an increasing commitment from all parties as previously agreed-upon milestones are achieved. The added motivation to accomplish agreed-upon milestones within established funding splits between DOE and the non-DOE participants would foster improved programmatic progress as well as stability. We commend the related efforts within Congress to establish a legislative initiative to provide stable government support to the development and deployment of qualifying advanced reactors. With such an approach, the prospects of significant private sector involvement would be greatly enhanced.

As noted in the Joint Statement, we recommend that Congress provide $35 million for DOE's MHTGR Program in FY-1989. These funds will be used to continue the first-of-a-kind preliminary design, technology and licensing development activities. This level of support is important to establish a balanced technical resource base within the Program plus foster the Project initiative development. In addition, it is recommended that adequate funding be provided to the NRC for their continued licensing development efforts.

On behalf of Public Service Company of Colorado, I would like to add a brief report on our Fort St. Vrain (FSV) power plant. The plant returned to service on December 28, 1987 after an extended outage. Through the end of March, the plant has achieved a 96% availability factor and a 64% capacity factor (based on the current NRC imposed limit of 82% of rated power). This operating experience has been most gratifying in light of our efforts to correct past problems at the plant. While Fort St. Vrain has experienced performance difficulties to date, they have been due, for the most part, to the circulator's water-cooled bearing system. This experience has led to the adoption of a much improved bearing system for the MHTGR. Outstanding experience has been achieved in many other systems that will be directly applied to the MHTGR, notably the fuel, fuel handling system, reactor control and steam generators.

Mr. Chairman, the gas reactor development in the U.S. is at a critical stage of early preliminary design and Project development for the MHTGR Program. We are increasingly convinced that the gas reactor concept, particularly as embodied in the MHTGR design, is best suited for broad deployment in the U.S. as well as most of prospective export markets for nuclear power. We remain resolute in our support for the concept and we urge this Subcommittee to continue their support.

JOINT UTILITIES' STATEMENT ON THE MHTGR PROGRAM

The Modular High Temperature Gas-Cooled Reactor (MHTGR) deserves a high priority within the overall U.S. advanced reactor programs on the basis of three key reasons:

- The MHTGR is an attractive generation alternative that is consciously responsive to the technical, economic and institutional issues currently restraining the expanded use of nuclear power by U.S. utilities.

- The MHTGR provides expanded potential for nuclear energy to serve future process energy needs, ranging from water desalination to coal/synfuel applications.

- The MHTGR is an attractive nuclear export product that is responsive to nuclear proliferation issues, offering world-wide nuclear leadership for the U.S.

Underlying these reasons is a world-wide need for safe, clean, economical energy. With particular emphasis on improved public acceptance, the MHTGR offers a greater degree of inherent and passive safety than any other nuclear reactor concept being developed for commercial power generation. For all accidents considered for public safety evaluations, the MHTGR is self-limiting to conditions well below fuel failure limits. That translates into enhanced safety margins whereby, in the event of an accident, the offsite doses are well below the regulatory limits requiring public evacuation or even sheltering. The inherent and passive design features also provide important financial risk reductions to the plant investors and ratepayers.

Utility/user support and interest continues with the increasing acknowledgment that the MHTGR can provide significant benefits and that new generation will be required in many parts of the country by the turn of the century. Organized utility/user support for and participation in the MHTGR Program is through Gas-Cooled Reactor Associates (GCRA). In addition, the utilities' Advanced Reactor Corporation has given their solid endorsement for continued MHTGR development following their review of DOE's Advanced Reactor Program.

Despite budget constraints, the MHTGR Program made substantial progress during the past year. The conceptual design was completed, the licensing review conducted by the NRC is validating the benefits of passive safety features and economic evaluations continue to show competitive energy costs. Overall, the development work has continued to engender confidence that the design can meet the challenging utility/user requirements developed by GCRA.

Since funding levels have been constrained, priority has been given to the critical design, licensing and technology development activities. The intent is early resolution of the issues confronting the deployment commitment for the MHTGR. For example, key to the realization of MHTGR's passive safety benefits is the NRC's acceptance of its safety concept and related licensing criteria. The final results of the safety assessment of the MHTGR conceptual design by the NRC, leading to their Safety Evaluation Report currently planned for this spring, will be an important factor in the Lead Project development activities planned for 1988.

Preliminary design of the nuclear island has begun within the DOE Program by a corporate team of General Atomics, Combustion Engineering and

Bechtel. A balance-of-plant design entity should be in place by mid-spring. In addition, cooperative efforts to develop a Lead Project initiative have been initiated with Siemens/Interatom, the pioneer of the MHTGR concept in the Federal Republic of Germany. Technology development continues through the MHTGR Lead Laboratory at Oak Ridge.

In spite of the continued progress and the potential National benefits, the Administration's proposed budget for FY-1989 does not include adequate resources for the MHTGR Program. Accordingly, we respectfully recommend that Congress provide $35 million within DOE's Advanced Reactor Program in FY-1989 for the continued preliminary design, licensing and technology development of the MHTGR. This budget level is needed to establish a balanced technical resource base and to foster a Lead Project initiative. With success, these efforts will result in a multi-year commitment by all parties leading to NRC's issuance of a Preliminary Design Approval of the MHTGR design followed by a construction permit for the Lead Project. In addition, it is important that the NRC's budget be adequately funded to assure the timely support of the ongoing licensing development process for the MHTGR.

It is further noted that the MHTGR requires a relatively modest effort to complete the front-end design, licensing and technology development required to support a Lead Project that could be deployed by the turn of the century. Further, the Lead Project may be deployed with the initial capital commitment limited to one module. This allows experience feedback for optimizing the subsequent modules of the Lead Plant as well as invaluable support for the NRC's design certification for subsequent commercial plants.

This Joint Statement is respectfully submitted to the Congressional Committees with oversight responsibility for the Nation's nuclear power development programs as evidence of the broad utility/user support for the MHTGR Program.

JOINT UTILITIES' STATEMENT ON THE MHTGR PROGRAM (Con't)

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E. Linn Draper, Chairman, Pres. & CEO
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JOINT UTILITIES' STATEMENT ON THE MHTGR PROGRAM (Con't)

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STATEMENT OF FUSION POWER ASSOCIATES

The effort to develop a fusion energy source has two important and equally essential parts. The first is, in the near-term, to demonstrate fusion plasma conditions of density, temperature and confinement time close to what is required in a fusion reactor. This effort includes developing the necessary technology and scientific understanding for those near-term achievements. The second important and essential element of fusion development consists of those programs required to ensure that fusion will be useful for some practical purpose in the long-term. These programs include concepts and concept improvements whose environmental, safety and economic features will make fusion a winner in comparison with competing technologies. Such efforts include the necessary systems studies and analysis, materials and technology development, new concept experiments, and fundamental physics and engineering research both at national laboratories, industries and universities.

Maintaining the necessary balance between these essential near-term and long-term aspects of fusion development has become especially difficult for both the magnetic and inertial fusion programs because of the decline of their budgets in recent years and the flat funding projections of the next several years.

In magnetic fusion, the near-term program consists primarily of the TFTR and CIT tokamak programs at Princeton, other large tokamak experiments, notably the DIII-D at GA Technologies and the Alcator program at MIT, and supporting theory and technology efforts. I would also include in this category the ITER design effort, although its payoff might well be categorized as "mid-term." These programs are clearly essential to fusion progress and deserve a certain degree of priority in allocating funds.

It is unfortunate that the funding projected to be available for the CIT project does not permit it to be built expeditiously. As I warned in my testimony last year, "Unless substantial increases are provided in FY 1989, I would anticipate schedule slippages and project cost increases." The budget submitted does not provide the increases required for expeditious completion either for

CIT or for several other projects, notably the CPRF at Los Alamos and the Field Reversed experiment at Spectra Technology.

Of more concern than the FY 1989 submission however, is the out-year projections. The OMB and DOE appear to have agreed on a 5-year projected flat budget profile that, if implemented, not only results in delays and cost increases for CIT but also spells disaster for many, if not most, of the programs required for the success of fusion in the long-term.

Systems studies, necessary for guiding the magnetic fusion program toward practical products, are projected to decline to a paltry $2 million per year. These studies include the investigation of concepts and fuel cycles that would impact the environmental, safety and economic characteristics of fusion devices. Also, a recent subpanel of the Magnetic Fusion Advisory Committee recently warned in its interim report that the program currently in place and projected would not result in sufficient data by the year 2005 to permit an assessment of the environmental, safety and economic aspects of fusion to be made nor to allow a fusion demonstration reactor to be built using low-activation materials.

It is not unreasonable to ask the long-term payoff portions of the fusion program to tighten their belts a little in FY 1989 to help launch a major new near-term project like CIT. It is unreasonable, however, for the executive and legislative branches to expect to build a $400 million new facility without providing new money for a substantial fraction of its cost. A new project of this magnitude requires some real budget growth. This problem is not too acute in FY 1989 but will become very acute in later years if the 5-year projections of DOE and OMB are adhered to.

A similar problem has presented itself in the case of the inertial fusion program. This program has had good experimental success in the last few years and is now ready to begin design leading to construction of a "Laboratory Microfusion Facility." Unless real growth in funding is forthcoming, design and near-term R&D for such a facility will restrict our ability to fund those aspects of the inertial fusion program which have long-term civilian payoff. These programs include fusion reactor conceptual design studies and the develop-

ment of laser and particle beam technologies that are capable of the high efficiency and repetitive pulsing necessary for a commercial power system.

Of immediate concern to this Committee should be the failure of DOE to request funds for the $27 million ILSE heavy ion fusion accelerator at LBL. Heavy ion fusion accelerator development has been a part of DOE's Basic Energy Sciences programs. As a consequence of DOE deciding not to fund the ILSE accelerator, they are also seriously considering abandoning heavy ion fusion accelerator development altogether. I urge this Committee to authorize the ILSE project and to direct the DOE BES office to continue this important program.

Fusion research and development is important to our nation's future. The fusion community appreciates the support it has received from this Committee over the years.

STATEMENT OF ANTONINE LAFATA SOTTILE. PH. DOCTOR OF ENGINEERING

Mr. Antonine Lafata Sottile
Ph. Doctor of Engineering
P.O. Box 28292
Washington, DC
20078-8292

Washington, DC. January 29. 1988.

Honorable CONGRESS of The USA.
SENATE Appropriation Committee - Energy
& Water Development Sub-Committee -
Washington, DC, - 20510 -

REF : My 22.nd & 21,st Application to This Honorable Congress to Appropriate in Fiscal Year 1989. $. 25. Million (defined a Quark = a sub-atomic particle in a Trillion $'s Budget), in order to achieve National Energy Independence, and to sustain our Nation's HIGH TECH. Advantage.

Honorable Chairman and Members of the Committee

The SCIENCE has moved on behalf of my Projects and Inventions, while Congress has neglected them, with heavy consequences in the future.
The recently discovered new properties in the compound materials, the CERAMICS, which have shown SUPERCONDUCTIVITY characteristics at Temperatures higher than 4.2 K. (K. = absolute degrees Kelvin) come to improve the possibilities of practical application of my Projects and Inventions.
The 4.2 K. is the boiling point of Helium liquid, the only element until now employed as refrigerant for superconductivity. But Helium is expensive, evaporable, and difficult to insulate.
A Ceramic compound of Lanthanum-Barium-Copper Oxide was reported in January 1986, with Superconducting characteristics at 30. degrees K., by 2. Scientists of the IBM. Laboratory in Zurich, Switzerland.

Past year 1987, a Ceramic compound of Yttrium-Barium-Copper Oxide was reported Superconductor at 90. K.
This achievement could allow the use as refrigerant for Superconductivity of NITROGEN liquid (with a a boiling point at 77. K.) which is cheap, safe, and easy to insulate. It could improve the possibilities of my Projects & Inventions:

1) The ROBOTS in Planet VENUS employed to condition its atmosphere charged of Carbon Dioxide (CO.2), by fissioning it through a LASER beam into Carbon and Oxigen, and crystallizing the fissioned pure Carbon into useful DIAMOND.

2) The Beam-splitting SOLAR-Mirrors Concentrators for Earth's Synchronous ORBIT selecting uni-frequency beams, and focusing them on Photovoltaic Arrays of appropriate BAND-GAP at Earth's ground surface. This disposition could increase ten-fold the efficiency of Photovoltaics with the Solar Electricity becoming COMPETITIVE to Electricity generated through other sources.

3) Here at Earth's ground level, my WAGON EUREKA which requires on Board Nr. 8. superconductor Electro-Magnets in order to be LIFTED above track 10. to 15. cm. and to FLY over the Electro-Magnetic Field, through NITROGEN will be equipped with lighter Electro-Magnets, and lighter Compressor employed to liquefy the evaporated refrigerant, than through HELIUM.

4) The LASER : its utilization in the Buildings, for which I applied for PATENT of INVENTIONS, the September 7. 1969. The Laser to detect : a) Gas emitted by Fire, or leaked by Tanks; b) Infractions by Trespassers; c) Earthquakes; d) to feed Apparats, Bulbs, Communications, inside flexible FIBER OPTICS Cables.

a) The Laser, through invisible UltraViolet Beam, to detect Gas emitted by Fire or leaked by Tanks. An Alarm Audio-Visual senses the lesser variations in the intensity of the Beam contacting Carbon Dioxide, or other gases.
Enormous improvement over existing complcated network of bulbs, placed on every ceiling, and subjected to failures of electric current that feeds them.
Improvement also over movable Boxes, fed by Batteries : FOUL PLAYERS may Bug, and Tamper them in order to harm Citizens residing in the buildings. They remain always in dangerous doubt if an alarm is provoked by Gas or by Foul-Play.

b) The Laser, through invisible InfraRed Beam, to detect Infractions by Trespassers around or inside buildings, avoiding fences and complicated devices.

c) The Laser, through visible Beam, to detect Earthquakes. The Beam reflected several times in an underground passage, between 2. independent Structures, (for example 2. buildings), at a distance more than 20. meters, provides exact DATA about the SEISMIC WAVES that advance between the 2. Structures, and the intensity of the Waves.
Enormous improvement over existing primordial differential Seismometers, which provide inaccurate DATA, through a metallic Rod, between 2. Structures located at a distance of only 20. meters.

d) The Laser Beam, inside flexible FIBER OPTICS Cables, to feed Apparats, Bulbs, Communications. A network of Laser Beam Fiber Optics CABLES is advancing to connect distant URBAN CENTERS with speedy and safe Communications.
For example the AT&T Bell Laboratories have demonstrated a new Optical AMPLIFIER

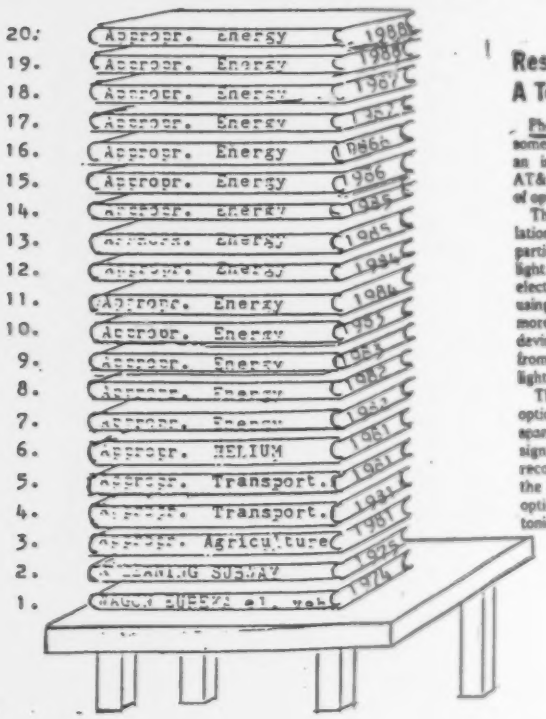
(based on the principle of the Laser itself), that "Stimulated by an incoming signal, emits its own light a thousand times higher". These Amplifiers have increased the distance between REPEATERS, operating on the Fiber Optics Cables, to "a record-breaking 230. miles".
See in the next page the reproduction of an Article entitled : PHOTONICS, the Science of Photons, "a Technology beyond ELECTRONICS,"the Science of ELECTRONS. In fact Photons move at the top Speed that exist in the Universe, that is : the Speed of Light, a few hundred Km./Sec. lesser of the rounded 300.000 Km./Sec.

THANK YOU

Mr. Antonino Lafata Sottile
Ph. Doctor of Engineering

NATIONAL ENERGY INDEPENDENCE PROJECTS

20) FY. 1988 SENATE Rec. Part 3 pp. 2719-2742 Hrgs.Apr. 5.1987
19) " " HOUSE " " 7 pp 209-218 Hrgs.Mar.24.1987
Purpose 1) : ROBOTS on Planet VENUS to condition its atmosphere; to fission by LASER Beam Carbon-Dioxide into C. and O_2; to exploit the pure Carbon to form DIAMOND originating a kind of GOLD-RUSH toward Planet Venus.- 2) Beam-splitting Filter-Mirrors in Earth's Synchronous Orbit to select mono-chromatic Beams focusing the uni-Frequncy beams to Photovoltaics of appropriate BAND-GAP at Earth's surface.- 3) A proto-type WAGON EUREKA, assuring 4/5 of Energy Savings in Transportation.


20. Appropr. Energy 1988
19. Appropr. Energy 1987
18. Appropr. Energy 1986
17. Appropr. Energy 1985
16. Appropr. Energy 1984
15. Appropr. Energy 1983
14. Appropr. Energy 1982
13. Appropr. Energy 1981
12. Appropr. Energy 1980
11. Appropr. Energy 1979
10. Appropr. Energy 1978
9. Appropr. Energy 1977
8. Appropr. Energy 1976
7. Appropr. Energy 1975
6. Appropr. HELIUM 1974
5. Appropr. Transport. 1973
4. Appropr. Transport. 1972
3. Appropr. Agriculture 1971
2. CLEANING SUBWAY 1970
1. WAGON EUREKA #1. 1969

SCIENCE

Researchers Take Step Toward A Technology Beyond Electronics

Photonics, a field whose promoters say could someday rival or even supersede electronics, took an important step forward when engineers at AT&T Bell Laboratories demonstrated a new kind of optical amplifier.

The wonders of electronics result from manipulations of electrons, which are charged subatomic particles. Photonics, which uses the particles of light called photons, could in principle do everything electronics can do, but better. Photonic devices, using glass fibers for wires, should be able to handle more information faster than comparable electronic devices. They would also be immune to disturbance from electrical fields, such as those generated by lightning and atomic bomb explosions.

The Bell Labs researchers have demonstrated an optical amplifier that is so effective it allows the span between repeaters, which boost a dimming signal in a fiber optic cable, to be increased to a record-breaking 230 miles. The amplifiers are also the first that work without having to convert the optical signal into electronic form and back into photonic.

MONDAY, DECEMBER 21, 1987

THE WASHINGTON POST

18) FY. 1987 SENATE Rec. Part 3. pp. 2133-2137 Hrgs.Apr.16.1986
17) " " HOUSE " " 8. " 1669-1675 " " " "
Project of SOLAR-driven Liquid-Metal Magneto Hydro Dynamic Generator to yield Electricity.

16) FY. 1986 SENATE Rec. Part 3. pp. 2693-2702 Hrgs.Apr.3.1985
15) " " HOUSE " " 9. " 3132-3141 " " " "
Project of a Network of underground Tunnels exploiting Gravity

14) FY. 1985 SENATE Rec. Part 4. pp. 2431-2436 Hrgs.Apr.3.1984
13) " " HOUSE " " 8. " 1430-1436 " " " "
Seven Immortal Principles: 1. Solar Energy 2. Electrification 3. Electro-Magnetic Flying 4. Energy Savings 5. Tunneling 6. Gradient Utilization 7. Wagon EUREKA Expansion -

12) FY. 1984 SENATE Rec. Part 3. pp. 1643-1653 Hrgs.Mar.24.1983
11 " " HOUSE " " 7. " 874-884 " " " "
The $. 25. Million of Appropriation required for: To build a Wagon EUREKA Prototype - To experiment a SOLAR MIRROR in GEO--SYNCHRONOUS ORBIT

10) FY. 1983 SENATE Rec. Part 4. pp. 2711-2717 Hrgs.Apr.24.1982
9) " " HOUSE " " 8. " 2586-2593 " " " "
120. Solar Mirrors settled in Earth's Synchronous ORBIT could provide the total Energy of every kind utilized in one year in THE USA. : about 8.76 Trillion KiloWattHours/Year -

8) FY. 1982 SENATE Rec. Part 3. pp. 1932-1943 Hrgs. Mar.24.1981
7) " " HOUSE " " 10. " 2402-2411 " " " "
Planets VENUS and MARS CONDITIONED in a 50. Years lapse vs. 1,000 Years proposed by Incompetents

6) FY. 1981 SENATE Rec. Part 3. pp. 953-957 Hrgs.May 16. 1980
Interior Committee: HELIUM Standard replacing GOLD Standard, as MONETARY Guaranty, next Century -

5) FY. 1981 SENATE Rec. Part 2. pp. 144-150 Hrgs. Apr. 16. 1980
4) " " HOUSE " " 7. " 615-619 " " 17. "
Appropriations on Transportation

3) FY. 1981 SENATE Rec. Part 3. pp. 513-514-515 Hrgs.Apr.2.1980
Appropriations on Agriculture : Useful INDUSTRIAL PRODUCTS by HARVESTED PLANTS -

2) SENATE Committee on Commerce, Science and Transportation Hearings Oct. 7-10 1975 on S. 1632 and HR. 8800 : ELECTRIC VEHICLE Act RECORD 94-96 - My Statement pp. 161-164 on my Project : <u>LEANWAY = A Leaning Subway</u> - Leanway's MOTTO : "To build and to operate 2. Subways, like the DC. Area METRO--RAIL by the BUDGET needed for only ONE." "To move 5. alike Subways by the Energy required for only ONE."

1) HOUSE Committee on Science and Technology. June 3-6 1975 HEARINGS on HR. 5470 ELECTRIC VEHICLE Act - RECORD 27. pp. 728-740 : My INVENTION " WAGON EUREKA " assures 4/5 of Energy Savings in Transportation by its UNDERFRAME engaged in successive Down-grades and Up-grades, providing FREE positive and negative ACCELERATIONS .

Mr. Antonino Lafata Sottile
Fh. Doctor of Engineering

National Energy Independence PROJECTS (5)

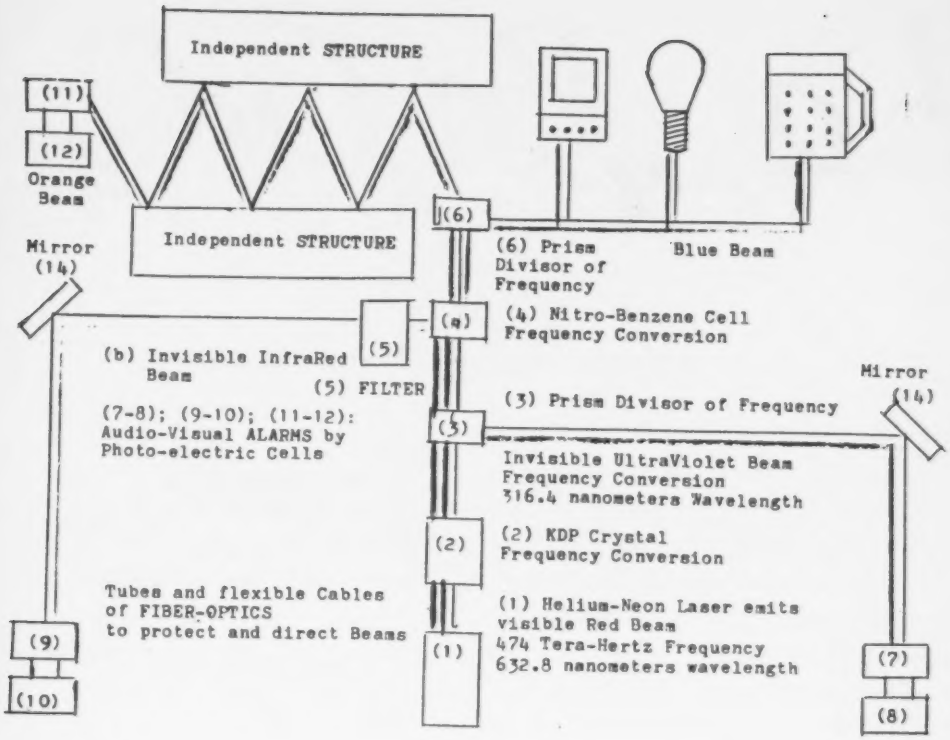
SUPERCONDUCTIVITY TEMPERATURES

CERAMIC Metal Oxide Compounds have been found that show SUPERCONDUCTIVITY characteristics at Temperatures higher than 4.2 K. (Absolute degrees KELVIN). 4.2 K. is the boiling point of HELIUM, untill now the only refrigerant means apt to generate Superconductivity in a Material.
Helium is expensive, evaporable, and difficult to insulate. For example : WAGON EUREKA, my Invention, in order to be lifted 10. to 15. cm. above track, and FLY on the electro-magnetic Field, would require on board Nr. 8. heavy superconductor electro-magnets and a heavy compressor to liquefy the evaporated Helium. These inconveniences could be mitigated by employing NITROGEN, which is cheap, safe, and easy to insulate. Nitrogen requires light electro-magnets, and a small Compressor, through a Compound developed Superconductor at 77. K. its boiling point.
In January 1986, 2. Scientists at the IBM. Laboratory in Zurich Switzerland achieved a Ceramic compound of Lanthanum-Barium-Copper Oxide that showed an "abrupt DROP on resistance to Electricity at 30. K."
The breakthrough focused the research of world-wide Laboratories on the new class of materials: Ceramics. Superconducting Compounds at 90. K. have been reported. The GOAL : A Superconducting Compound at Room Temperature.

Absolute degrees KELVIN = K.		
2045.	K.	= + 1772 C. degrees CELSIUS - Platinum FREEZES
373.15	K.	= + 100 C. " "
273.15	K.	= ZERO C. " " Triple point of Water Solid Liquid Vapor
241.15	K.	= ZERO F. degrees Fahrenheit = - 32. degrees Celsius C.
90.	K.	= - 183.15 C. and higher teperatures reported through Ceramic compound of YTTRIUM BARIUM COPPER Oxide developed past year 1987 by Houston University LAB.
77.	K.	= - 196.15 C. = Boiling point of NITROGEN, element suitable to replace Helium in many applications.
30.	K.	= - 243.15 C. Breakthrough achieved in January 1986 in Zurich Switzerland by 2. Scientists in the ABM. Laboratory with a Ceramic of LANTHANUM BARIUM COPPER OXIDE
20.3	K.	= - 252.85 C. = Boiling point of HYDROGEN liquid which is dangerously combustible.
4.2	K.	= - 268.95 C. = Boiling point of HELIUM liquid which is expensive, evaporable, and difficult to insulate.
Absolute ZERO KELVIN	K.	= - 273.15 C. = - 459.67 F. degrees Fahrenheit, in which MOLECULAR MOTION CEASES .

OUTLINE joint to my Application for PATENT of INVENTIONS presented Sept. 7, 1969

LASER : its utilization in the buildings - The Laser is a SOLUTION ready to solve Problems, that need Solutions.
The Laser : a) to detect GAS emitted by Fire, or leaked by Tanks, through invisible UltraViolet beam; b) to detect INFRACTIONS by Trespassers, through invisible InfraRed beam; c) to detect EARTHQUAKES, through visible Orange beam; and to feed Apparats, Bulbs, COMMUNICATIONS, etc., inside flexible FIBER OPTICS Cables, through visible Blue beam.
The arrival on the market of Semiconductor Lasers cheap (few dollars cost), micro-sized (less than 1. cubic cm.) will simplify the present OUTLINE : different Lasers emitting different Beams, instead of the big Laser adopted here, of Helium-Neon, emitting a visible Red beam, converted to the 4. quoted beams, through Cells converters of Frequency, and Prisms divisors of Frequency.
The enormous IMPROVEMENTS over existing, primordial Apparats of detection, Communication, etc. will promote the universal diffusion of LASER APPARATS.


Independent STRUCTURE
(11)
(12)
Orange Beam
Independent STRUCTURE
Mirror (14)
(6)
(6) Prism Divisor of Frequency
Blue Beam
(a)
(4) Nitro-Benzene Cell Frequency Conversion
(5)
(b) Invisible InfraRed Beam
(5) FILTER
(7-8); (9-10); (11-12): Audio-Visual ALARMS by Photo-electric Cells
(3)
(3) Prism Divisor of Frequency
Mirror (14)
Invisible UltraViolet Beam Frequency Conversion 316.4 nanometers Wavelength
(2)
(2) KDP Crystal Frequency Conversion
Tubes and flexible Cables of FIBER-OPTICS to protect and direct Beams
(1)
(1) Helium-Neon Laser emits visible Red Beam 474 Tera-Hertz Frequency 632.8 nanometers wavelength
(9)
(10)
(7)
(8)

$La_{2-x}Ba_xCuO_4$

It started in an IBM lab in Zurich, Switzerland.
Who knows where it will stop?

In January 1986, two IBM scientists, J. Georg Bednorz and K. Alex Müller, ended a long quest. They discovered a whole new class of superconducting materials, represented by the formula above.

Their breakthrough sparked enormous activity in an area of research most scientists had abandoned as hopeless.

Today, researchers at IBM, and throughout the world, are expanding on what these two started. And although no one can be sure where superconductor research will lead, there is potential for advances in everything from computers to medicine.

In October 1987, just 21 months after their breakthrough, Bednorz and Müller were chosen to receive the Nobel Prize in Physics.

Naturally, we're proud of these two scientists, just as we are of the two IBM scientists who won the 1986 Nobel Prize in Physics.

Providing a climate that fosters achievements like these has always been important at IBM. After all, advances of this magnitude do more than contribute to a company. They contribute to the world.

IBM

FORTUNE

ADDITIONAL PREPARED STATEMENTS SUBMITTED FOR THE RECORD

Senator JOHNSTON. In addition, the record will remain open for 1 week to receive any additional or late statements forwarded to the committee. Additional statements received by the subcommittee will be placed in the record at this place.

[The statements follow:]

STATEMENT OF COLORADO RIVER MUNICIPAL WATER DISTRICT

I am writing to convey to you some very disturbing news relative to West Texas and the semiarid southwestern United States. I have learned that the Office of Management and Budget has recommended that the Bureau of Reclamation's Division of Atmospheric Research not be funded for FY89.

This action is particularly disturbing to me because in 1987, my Board of Directors expressed its intent to match the FY89 Federal allocation with $245,000 to be used for the continuation and completion of the Southwest Cooperative Weather Modification Research Program. I understand the City of San Angelo also made a similar commitment.

The Southwest Cooperative Program is a cooperative weather modification research effort involving local governments, the states of Texas and Oklahoma, and the Bureau of Reclamation to evaluate and demonstrate the efficacy of summertime operational cloud-seeding programs for rainfall enhancement in the Plains Region of the United States. In the summers of 1986 and 1987, the Texas Water Commission, working with the Colorado River Municipal Water District and the City of San Angelo, conducted the second of five field projects. Findings from the data collected and analyzed during the two summer field projects were more illuminating than we had expected. In brief, the results strongly suggest that randomly-selected seeded rainfall systems when compared with unseeded rainfall systems, exhibit greater area coverage, rainfall rates, duration and rain volume. All of this simply implies that the seeded systems were more efficient rain producers than the unseeded systems.

These scientific findings, coupled with highly favorable results from an evaluation of the District's own 17-year operational cloud-seeding program, persuades us that research efforts to refine and improve upon current weather modification technology for the benefit of the semiarid southwestern United States should be maintained aggressively and resolutely.

We have the beginnings of a solid, applied-research program that has a clear objective, talented personnel, local support and very encouraging, albeit preliminary, results. We should not allow this research effort to fall into the "start-stop-start again" time and money-wasting cycle that unfortunately characterized its predecessor programs. With two of SWCP's five summer field program now completed, at a cost of some $700,000 to U. S. Taxpayers, I do not believe we are acting prudently when we abandon a research effort with so much potential for good.

We respectfully urge you and the members of the Subcommittee on Energy and Water Development to consider the OMB's decision carefully and restore the Division of Atmospheric Research's budget to a total of $5 million, of which $1.5 million should be used to maintain staff and $3.5 million for matching funds so local and state governments can continue to participate in this cooperative applied research program.

STATEMENT OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AGC is:

- More than 32,500 firms including 8,000 of America's leading general contracting firms responsible for the employment of 3,500,000-plus employees;
- 104 chapters nationwide;
- More than 80% of America's contract construction of commercial buildings, highways, industrial and municipal-utilities facilities.

The Associated General Contractors of America represents more than 32,500 firms including 8,000 of America's leading construction companies. These general contractors employ more than 3,500,000 workers, and perform more than 80% of America's contract construction of commercial buildings, highways, industrial and municipal-utilities facilities.

The Water Resources Development Act of 1986 was the first omnibus water resources authorization bill enacted in seventeen years. The Act contains maximum limits on appropriations over the next five years for the Civil Works Program of the U.S. Army Corps of Engineers. AGC encourages Congress to provide appropriations to the fullest limit permitted by that Act in order to begin addressing in earnest the nation's water resources infrastructure needs. The construction program of the Bureau of Reclamation must also be provided with funding in excess of previous years to complete ongoing projects, in order to realize their benefits at an early date.

Federal water programs, chiefly the Corps' Civil Works Program and the Bureau's construction program, have enhanced entire multi-state regions by providing flood protection, water transportation and recreational opportunities. Historically, irrigation and hydropower projects have stimulated the regional economies, by providing incentives for business and agricultural capital investment.

National security is another crucial, though infrequently-mentioned, aspect of the nation's water resources. Navigable channels, electricity for production and adequate supplies of water are vital to the country's defense.

In the early 1800's, this nation's forward-thinking leadership recognized the necessity for taming uncontrolled river basins, which periodically threatened life and property, into useful and productive systems essential to manufacturing activity and economic growth. The nation has benefited. So have the states. The system has worked because federal leadership and coordination have made it work.

Congress needs to assure its leadership in this area by ensuring that the federal water program is provided with adequate funds not only for fiscal 1989 but for the subsequent years as well.

The Administration's fiscal 1989 budget request for the Corps of Engineers' Civil Works Program reflects a modest gain, but the amount of appropriations provided to it has actually decreased slightly. The gain for the overall program can be directly attributed to contributions to the Civil Works Program by the Inland Waterway Trust Fund and other accounts. While the contributions to the Corps construction program made by the Trust Accounts cannot be discounted, Congress must continue providing an adequate level of appropriations from general revenue to ensure that the public's traditional and firm commitment to the Civil Works Program is not lost.

The Administration's fiscal 1989 budget request for the Bureau of Reclamation represents a small increase over that for fiscal 1988. AGC commends this increase as the demand for additional water supplies by the public in the regions served by the Bureau continues to grow.

Arid Southern California has the greatest concentration of water supply structures in the nation. The Southwest region has allocated more water from the Colorado River than normally flows

down its valley, and its growing cities in the basin are constantly competing for the supply that it has to offer. More water supplies are needed, however. Additional impoundment reservoirs which could capture runoffs would greatly relieve the region's water quantity problems. Two highly beneficial water programs in the Southwest which deserve continued support by Congress are the Central Arizona Project (CAP) and Central Utah Project (CUP). These great engineering projects guarantee a balanced supply of quality water to the semi-arid lands that are in critical need of this resource.

The Administration's fiscal 1989 budget request reflects the Administration's intent to place increased amounts into projects, such as CAP and CUP, that are close to completion in order to garner their benefits as soon as possible. AGC believes that this action is a prudent move as long as the level of funding for the Bureau's construction program does not drop upon the completion of these projects.

Passage of adequate appropriations is another step in providing for adequate water resources for the balance of the century. Further sustenance of the nation's economic renewal is predicated on the nation's water resources infrastructure. Traditional water use and flood control projects, developed cooperatively by local, state and federal groups, are proven catalysts for national growth and expansion by providing nearly 60,000 jobs for every $1 billion in expenditure.

The Associated General Contractors of America urges Congress to continue to exert its leadership in water resources development. The nation can ill-afford any further federal deferral of needed maintenance or replacement of the nation's waterway structures.

America's infrastructure needs have been carefully documented by AGC and other organizations. Prompt attention to these needs will encourage a more reasonable balance between the twin objectives of stabilization of natural resources and stimulation of economic growth. AGC encourages Congress to make this commitment through a well funded program for this nation's water resources structures.

LETTER FROM CLINTON A. VINCE, VERNER, LIIPFERT, BERNHARD, MCPHERSON & HAND, REPRESENTING THE SOUTHEASTERN POWER CUSTOMERS GROUP

May 2, 1988

The Honorable Bennett Johnston
Senate Appropriations Subcommittee
on Energy and Water Development
131 Senate Dirksen Office Building
Washington, D.C. 20510

Dear Senator Johnston:

We represent the Southeastern Power Customers Group, a coalition of consumer-owned electric systems in the states of Alabama, Georgia, North and South Carolina and Mississippi which purchase power from the Southeastern Power Administration. On April 15, 1988, we submitted testimony to your subcommittee on behalf of the Southeastern Power Customers Group.

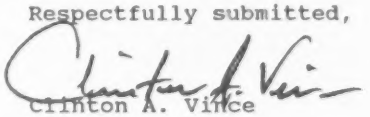
Upon further review of the testimony, we discovered several errors which we wish to bring to your attention and correct. These are as follows:

1. On page 2, note 1, a listing of projects in the Georgia-Alabama system is provided. This list should include the Clark Hill project.

2. In Attachment 1 to our testimony, we provided a listing of the membership of the Southeastern Power Customers Group. A corrected copy of Attachment 1 is appended to this letter.

We regret any inconvenience caused by these errata.

Respectfully submitted,



Clinton A. Vince

Enclosure

ALABAMA

Alabama Electric Cooperative, power supplier to the following systems:

Covington Electric Cooperative
South Alabama Cooperative
Southern Pine Electric Cooperative

Baldwin County EMC
Black Warrior EMC
Central Alabama EC
Clark-Washington EC
Coosa Valley EC
Dixie EC
Pea River EC
Pioneer EC
Tallapoosa River EC
Tombigbee EC
Wiregrass EC

Alabama Municipal Electric Authority, power supplier for the following cities:

City of Alexander City
City of Dothan
City of Fairhope
City of Foley
City of LaFayette
City of Lanett
City of Luverne
City of Opelika
City of Piedmont
City of Sylacauga
City of Tuskegee

City of Andalusia
City of Brundidge
City of Elba
City of Opp

FLORIDA

Choctawhatchee EC
West Florida ECA
Gulf Coast Electric Cooperative (through Alabama Electric Cooperative)
Escambia River Electric Cooperative (through Alabama Electric Cooperative)

GEORGIA

Oglethorpe Power Corporation, power supplier to the following systems:

Altamaha EMC
Amicalola EMC
Canoochee EMC
Carroll EMC
Central Georgia EMC
Coastal EMC
Cobb EMC
Colquitt EMC
Coweta-Fayette EMC
Douglas EMC
Excelsior EMC

Flint EMC
Grady County EMC
Habersham EMC
Hart County EMC
Irwin EMC
Jackson EMC
Jefferson EMC
Lamar EMC
Little Ocmulgee EMC
Middle Georgia EMC
Mitchell EMC
Ocmulgee EMC
Oconee EMC
Okefenoke EMC
Pataula EMC
Planters EMC
Rayle EMC
Satilla EMC
Sawnee EMC
Slash Pine EMC
Snapping Shoals EMC
Sumter EMC
Three Notch EMC
Tri-County EMC
Troup EMC
Upson County EMC
Walton EMC
Washington EMC

Municipal Electric Authority of Georgia, power supplier for the following cities:

City of Adel
City of Albany
City of Barnesville
City of Blakely
City of Brinson
City of Buford
City of Cairo
City of Calhoun
City of Camilla
City of Cartersville
City of College Park
City of Commerce
City of Covington
City of Doerun
City of Douglas
City of East Point
City of Elberton
City of Ellaville
City of Fairburn
City of Fitzgerald
City of Forsyth
City of Fort Valley
City of Grantville
City of Griffin
City of Hogansville
City of Jackson
City of LaGrange
City of Lawrenceville
Town of Mansfield
City of Marietta
City of Monroe
City of Monticello
City of Moultrie
City of Newnan
City of Norcross

City of Palmetto
City of Quitman
City of Sandersville
City of Sylvania
City of Sylvester
City of Thomaston
City of Thomasville
City of Washington
City of West Point
City of Whigham
Crisp County Power Commission

MISSISSIPPI

South Mississippi Electric Power Association, power supplier for the following systems:

Coast EPA
Singing River EPA
South Mississippi EPA
East Mississippi EPA

NORTH CAROLINA

North Carolina Electric Membership Cooperative, power supplier to the following systems:

Blue Ridge EMC
Crescent EMC
Haywood EMC
Pee Dee EMC
Rutherford EMC
Union EMC

North Carolina Municipal Power Authority #1, power supplier for the following cities:

Town of Bostic
Town of Drexel
City of Morganton

SOUTH CAROLINA

Santee Cooper, power supplier for the following city:

City of Georgetown

Central Electric Power Cooperative, power supplier for the following systems:

Aiken Electric Cooperative, Inc.
Berkeley Electric Cooperative, Inc.
Black River Electric Cooperative, Inc.
Coastal Electric Cooperative, Inc.
Edisto Electric Cooperative, Inc.
Fairfield Electric Cooperative, Inc.
Horry Electric Cooperative, Inc.
Lynches River Electric Cooperative, Inc.
Marlboro Electric Cooperative, Inc.
Mid-Carolina Electric Cooperative, Inc.
Newberry Electric Cooperative, Inc.
Palmetto Electric Cooperative, Inc.
Pee Dee Electric Cooperative, Inc.
Contee Electric Cooperative, Inc.
Tri-County Electric Cooperative, Inc.

Saluda River Electric Cooperative, power supplier for the following systems:

Blue Ridge Electric Cooperative, Inc.
Broad River Electric Cooperative, Inc.
Laurens Electric Cooperative, Inc.
Little River Electric Cooperative, Inc.
York Electric Cooperative, Inc.

Piedmont Municipal Power Agency, power supplier for the following cities:

City of Abbeville
City os Easley
City of Gaffney
City of Greer
City of Laurens

STATEMENT OF THE SOUTHEASTERN POWER CUSTOMERS GROUP

Mr. Chairman, we would like to thank you for extending the Southeastern Power Customers Group ("Power Customers Group") the opportunity to present written testimony during these hearings. The Power Customers Group wishes to raise several issues with respect to the operation of certain federal water resources projects in the Southeastern United States, as described in the testimony of the U.S. Army Corps of Engineers.

The Power Customers Group is extremely concerned that the Corps of Engineers may operate projects in the Southeast in a manner contrary to project authorizations so as to diminish the electric power benefits presently enjoyed by consumers in the region. Because of our concern for this potential harm, the members of the Power Customers Group would have individually submitted their views to the Subcommittee. However, for the convenience of the Subcommittee, we are grouping our presentations into this single document.

I. NATURE OF THE POWER CUSTOMERS GROUP

The Power Customers Group is an ad hoc association of many of the consumer-owned power systems in the Southeastern United States. Its membership is set forth in Attachment 1 and includes rural electric cooperatives and municipally-owned systems in five states, serving millions of consumers. The concerns expressed herein are shared by the American Public Power Association, the national service organization representing more than 1,750 locally-controlled public power systems. It should be noted that the precedent the Corps of Engineers seeks to establish with respect to the operation of the Georgia-Alabama system may affect the 38 million consumers nationwide who receive power from federal water resources projects.

The member systems of the Power Customers Group purchase power from the Southeastern Power Administration ("SEPA") under the preference clause, which gives the first right to purchase power generated at federal projects to consumer-owned power systems. Members of the Power Customers Group receive power from, among other sources, the group of projects known as the "Georgia-Alabama System of Projects,"1/ which projects are operated by the U.S. Army Corps of Engineers' South Atlantic Division.

II. SUMMARY OF THE TESTIMONY

The Power Customers Group is deeply concerned about the current water shortage conditions in the Southeast. We recognize the need to accommodate competing uses, and to make sacrifices where appropriate. Nevertheless, we are troubled that the current management of the Georgia-Alabama System may run afoul of the project authorizations established by Congress, and unfairly concentrate the economic burdens of the water shortage on a group that pays for its use of project benefits — namely, hydropower customers. This management plan, though intended to respond to a water shortage, will diminish the capacity value of these projects in times of low and high water. The Corps of Engineers' plan threatens to force power customers to pay project costs and replacement power costs, causing grave economic consequences to these customers, as the attached correspondence from SEPA demonstrates (Attachment 2). We would like to work with the Corps of Engineers and beneficiaries of other authorized purposes to develop a framework for management of the reservoirs during periods of low water which addresses these issues.

In our view, the following represents a fair balancing of interests:

- Water supply and water quality should have high priority during drought conditions.

- Protection of the long-term contract capacity credit is the primary concern of power customers. In general, minimum releases required for water supply should be sufficient to maintain the contract capacity ratings of the Georgia-Alabama System projects if the releases are coordinated with SEPA.

1/ The projects in this system include the following: Allatoona, Carters, Robert F. Henry, Miller's Ferry, Hartwell, Russell, Thurmond, Buford and West Point. These projects are operated by the Corps of Engineers on an integrated basis, and supply power marketed by SEPA to millions of consumers.

- Hydropower users recognize the need to sacrifice energy in order to conserve consumptive water during emergency conditions.

- To the extent the Corps of Engineers determines to reduce generation in violation of contractual commitments, hydropower users must be compensated for the higher power costs due to the reductions in generation at the projects.

III. DISCUSSION

A. Project Authorizations

Mr. Chairman, the Corps of Engineers has discussed its responsibility to fulfill authorized project purposes, and to balance out competing purposes during times of water shortages. The hydropower users have not asked, and will not ask, the Corps of Engineers to use the water resources in a manner that would exclude other congressionally-authorized purposes during drought conditions. To be faithful to congressional direction, however, we believe it is important to be precise in describing authorized purposes.

As this Subcommittee knows well, the projects in the Georgia-Alabama System were authorized by Congress in various legislative enactments. Congress authorized each project based upon an analysis that weighed the benefits to be gained from the project for its authorized purposes against the costs of the project. Congress determined benefits to hydropower customers based upon the anticipated allocation of water available for hydropower production and the facilities installed for power generation, and allocated that benefit to power customers as a cost to be repaid to the Treasury. In many instances, without the revenues anticipated from power generation, the Corps of Engineers could not justify the project. Congress also allocated project costs to beneficiaries of other authorized purposes but virtually none of those capital costs was required to be recovered in cash from such beneficiaries.

Over the years, power customers have paid their allocated share of capital costs associated with these projects through their rate schedules. Indeed, we have been the only project beneficiary to return any significant revenues to the federal Treasury.

Thus, as this Subcommittee well understands, the phrase "authorized purpose" is a term of art: it implies congressional decision on the intended use of a project, and an allocation of costs including repayment in accordance with that legislative decision.

B. Importance of Municipal and Industrial Water Use

Municipal and industrial water use is not a statutorily-authorized purpose at any of the Georgia-Alabama System projects. Project authorizations notwithstanding, all parties recognize that municipal and industrial water supply should have top priority during drought conditions.

The priority of municipal and industrial usage, however, does not imply that the rights of power customers disappear. Rather, power customers believe that it is feasible to coordinate power production and water usage with SEPA so as to permit the continued production of weekly minimum generation required by SEPA's contracts with power customers and to protect the power customers' long-term capacity credit. Such an operational plan was used during the drought in the summer of 1986, and resulted in accommodation of water consumption needs, with an impact on power generation acceptable in the context of those conditions.

C. The Current Water Shortage

As the Corps of Engineers has accurately stated, the projects in the Georgia-Alabama System have been experiencing low pool levels. These lake levels are not the result of heavy hydropower usage but rather are due to sharply reduced inflows resulting from lack of rain. Based upon these levels, the Corps of Engineers in November 1987 reduced generation and began to withhold water. The Power Customers Group submits that this action was not warranted.

Based upon hydrologic history, the pool levels, though low, were higher than the point at which the Corps of Engineers has in the past begun to withhold water. Early action by the Corps of Engineers to withhold water in November and

December (without SEPA's concurrence, as shown in Attachment 3) could only have been based on the assumption that no rain would fall during the winter and spring (normally the months of greatest rainfall). If the Corps of Engineers had followed this assumption in the past, it would have unnecessarily cost the hydropower users millions of dollars in replacement power.

D. The Economic Responsibility of Low Water

Past history shows that in periods of water shortages hydropower users have been making financial sacrifices for the sake of other users. Although power customers pay over 80 percent of the project costs, in lieu of drawing water levels down to the lower power pool limits established by Congress, replacement energy has been purchased to help maintain higher lake levels. Over the last two years, this has amounted to approximately $11 million, which the power customers presently must pay.

While power customers have been penalized during times of low water by these replacement power costs, our forbearance from drawing pools down to the lowest level has inured to the benefit of non-paying, recreation users. The fact that the lake levels have not been drawn down to the lower power pool limits provides a benefit to these interests, the cost of which was paid by the hydropower users. While power customers have not sought recovery of the cost of this accommodation, the Power Customers Group believes that if water users wish to have a right to the water benefit, then they should be required to pay for that right.

For example, if as a direct result of protecting recreation benefits during drought conditions less hydropower is made available than current contracts establish as minimum quantities, the user receiving the benefits should pay the replacement power cost of the lost hydropower. This will assure that those parties who contribute the least to project costs do not gain an unfair windfall during drought conditions.

However, in our view recreation users should not be provided a benefit for which they have not paid. The federal government issued leases to individuals or businesses to build on the lake. We understand that the leases did not contain assurances as to lake levels. If such assurances had been requested by the lessees, we believe compensation should have also been requested by Congress. Therefore, decisions were made by recreation interests to invest capital, knowing that lake levels could change to the detriment of the lake's recreation potential.

E. The Importance of Protection of Capacity

In constructing these projects, an agreement was reached whereby hydropower customers would repay their project costs in return for utilization of the project's power capacity. The capacity of these projects represents a long-term low-cost resource that is of critical value to the utilities that contract for this resource. The Power Customers Group asks this Subcommittee to assure that no action is taken by the Corps of Engineers that would adversely affect the capacity values established by SEPA.

If the capacity values are adversely impacted, the long-term result would be a substantial increase in costs to the customers of SEPA. For example, if as a result of the Corps of Engineers' operational decisions the hydropower benefits of these projects disappear, preference customers will be forced to purchase far more expensive replacement power, causing significant rate increases. And, someone will still have to pay project costs. Without the revenue stream that power customers have provided over the years, these costs will inevitably fall on the U.S. taxpayers.

Moreover, utilities in the Southeastern Electric Reliability Council have included the capacity and energy of the Georgia-Alabama System in their long-term planning to meet the power needs of the region. Should the power output of this system become unavailable due to operational changes made to accommodate competing users, these utilities will be forced to come up with alternative sources of capacity. In view of the difficulties and uncertainties associated with other generation alternatives, including siting, we would urge the Subcommittee to support the efforts of the Power Customers Group to develop a reasonable resolution of these issues.

ATTACHMENT 2

Department of Energy
Washington, DC 20585

November 4, 1987

Major General C.E. Edgar, III
U.S. Army Engineer Division,
South Atlantic
Corps of Engineers
510 Title Building
30 Pryor St., S.W.
Atlanta, Georgia 30335-6801

Dear General Edgar:

This letter is in response to your letter dated October 22, 1987, and the follow-on meetings in your offices on October 23, 1987, and October 26, 1987, regarding the subject of the present conditions of the lake levels for the projects included in the Savannah and Mobile districts from which SEPA markets hydroelectric power in the Georgia-Alabama System and the Jim Woodruff System.

While I agree with you that the present conditions are such that we should be concerned, I believe that after consideration of all of the relevant factors, your proposed actions put forth in the press release of October 23 and the meeting on October 26, 1987, are premature. The present lake levels are not the main issue involved, but rather the inflow conditions experienced during the months of August, September, and October 1987. In fact, the lake levels are well above the lake levels experienced during the drought of 1980-81 on the major storage projects. As you are aware, the drought conditions of 1980-81 are the critical period upon which Southeastern Power Administration bases the quantities of capacity and energy which are marketed in the SEPA Georgia-Alabama System.

SEPA is very much interested in maintaining the project lake levels at a level which will provide protection to the system dependable capacity as well as provide the other benefits associated with the Congressionally approved project purposes. As we have done in the past, during the droughts of 1981 and 1986, SEPA is prepared to purchase replacement energy in lieu of actual project generation if our evaluation of the system conditions demonstrates an emergency which warrants such purchases. Each of the projects in the Georgia-Alabama System have specific top and bottom elevations designated for the power pool limits and the quantities of power being marketed by SEPA are based upon studies which utilize those power pool limits. As we have explained, and studies provided to your staff which confirm, the power quantities which are marketed are based upon the drought conditions of the 1980-81 drought. The projects of the Georgia-Alabama System have a history of being able to recover during the winter and spring months even following droughts of the magnitude of the 100-year plus drought of 1986. As an example of the refill potential for the Buford Project, which apparently is one of your major concerns, the actual project records from 1958 through 1987 would indicate that during the fall months of September through December, the project lake level was below elevation 1060 a total of eight times during

the 30-year period which equates to 27 percent of the time. Only twice during the 30-year period did the project fail to refill to at least elevation 1070. Thus, the project refilled to elevation 1070, 93 percent of the time. A similar review of the actual records for the Allatoona Project indicates that since 1958, when the rule curve elevations of 840 to 823 were instituted, the project lake level has been below elevation 823 a total of 13 times during the 30-year period which equates to 43 percent of the time. Again only twice during the 30-year period did the project fail to refill to elevation 840. Thus, 93 percent of the time the project did refill.

My point is that the present lake levels would not be such a concern if the inflows were at or near normal levels. Therefore, a realistic view of the potential inflow conditions to be expected in the succeeding months becomes the cornerstone for any proposed actions by the responsible agencies. This being the month of November, which historically has been the beginning of a period of the year when the project inflows will start to increase, places us in a position of optimism in comparison to the outlook in the month of June when expectations for increased inflow in the succeeding months would be significantly less.

However, based upon utilizing the inflow conditions which were experienced during the worst drought of record, 1986, the SEPA study for the Georgia-Alabama System would indicate that purchases of replacement energy would be necessary in order to protect the project lake levels and the system dependable capacity during 1988.

SEPA will be monitoring and evaluating the project inflows, project elevations, system energy in storage, and other project requirements to determine when the appropriate time may be to initiate purchases of replacement energy for the Georgia-Alabama System. When such replacement energy purchases are initiated, it will be very important to continue to monitor, evaluate, and make changes to such replacement energy purchases as the system conditions dictate. We have just recently completed our studies for projecting the timing and magnitude of the possible replacement energy purchases in the Georgia-Alabama System for 1988 based upon a repeat of the worst drought of record, 1986. We feel this is an ultra-conservative projection, using the 1986 inflows, the Clarks Hill releases restrictions, 2-hours use of the system capacity, and purchasing all contract energy commitments in excess of the estimated 22,000 mwh/week that the system would produce. During the drought of 1986, the actual system generation with similar restrictions being imposed was approximately 24,000 mwh/week. The SEPA study for 1988, using the 1986 inflows, indicates that purchases of replacement energy to meet the contract commitments, although higher than those made during the 1986 drought, would still protect the system dependable capacity and preserve the end of the year lake levels at the major storage projects well above the bottom of the respective power pools.

As of this date it would appear that only minor improvement could be obtained during 1988 by initiating the purchases in November 1987 compared to initiating the purchases as late as January 1, 1988, if inflow conditions are experienced equal to or worse than the 1986 inflows.

The 11 Federally owned hydropower projects operated by the Corps of Engineers in the Mobile and Savannah districts are integrated hydraulically, electrically, and financially to form the Georgia-Alabama System and the Jim Woodruff System in the marketing of power from these

Federal projects. The capacity and energy marketed from these projects is based upon Corps of Engineers design criteria and conform to Congressionally authorized project purposes. As I have indicated previously, each project has designated power pool limits and the storage of the water in each lake has been allocated to the project purposes of each respective project. The power quantities marketed from the Georgia-Alabama System and the Jim Woodruff System are based upon and consistent with such Congressionally authorized criteria. Your letter of October 22, 1987, stating your preliminary indications that the Corps will be unable to meet the contractual energy quantities during the months of June through September, is inconsistent with the purposes for which the projects were authorized, constructed and have been operated since each project became revenue producing.

SEPA is the Federal agency that Congress has made responsible for the marketing of the hydroelectric power from the Federally owned projects operated by the Corps of Engineers and as long as the projects can be operated in compliance with Congressionally authorized purposes and within established power pool limits, SEPA expects the Corps to fulfill its obligation as a Federal agency and to comply with the law. Therefore, as long as the projects can be operated within the power pool limits, SEPA expects the Corps to deliver the contractual quantities of energy and capacity from the system on the schedules provided by SEPA for the various utilities and approximately 200 cooperative and municipal customers involved.

I believe the purposes for which the projects were authorized, constructed, and have been operated for over 30 years have been met by the coordination and cooperation of our two agencies. During these periods of adverse water conditions, when conflicting interests for the use of the water become vocal, it is incumbent upon our two agencies to adhere to the project criteria and intended purposes as authorized by Congress. To do otherwise, only lends itself to unnecessary controversy.

Sincerely,

Harry J. Geisinger
Administrator

cc: LTG. Elvin R. Heiberg, III
Chief of Engineers
Pulaski Bldg
20 Massachusetts Avenue, N.W.
Washington, D.C. 20314

ATTACHMENT 3

Summary Statement
Harry C. Geisinger
Administrator
Southeastern Power Administration

A funding level of $36.2 million is requested in the President's FY 1989 Budget, an increase of $8.3 million, of which $7.8 million is for Purchase Power and Wheeling. Power revenues for FY 1989 are estimated to be $145 million.

Mr. Chairman, if I may, I would like to make the Committee aware of the most serious problem facing Southeastern at this time, which is the management of reservoir projects for diverse, competing uses. Ironically, I believe the results of the drought of the 1980's will prove to be beneficial to the Southeastern United States, because in the near future, the demand for water will, under normal conditions, require great management skills. The drought of the 1980's has forced Federal, state and local officials to face up to a momentary problem that in a few short years will be the norm. Education of the public and advance planning will be required to prevent most water shortages.

Unfortunately, the U. S. Army Corps of Engineers, a major cog in the wheel of water use and supply, has responded to a vocal group of recreational businesses and real estate developers rather than to carry out the wishes of the Congress. As a for instance, in November, at the beginning of what is normally the rainy season, the Corps arbitrarily made a unilateral decision to restrict the power generation at the Georgia-Alabama projects in favor of recreation and other interests, causing Southeastern's contracts with the cooperatives, municipalities, and facilitators to be exposed to default. To avoid breaking these contracts, Southeastern purchased 39,479 megawatt-hours of energy at a cost of $884,000. During the 6-week period of restricted generation, it did rain, and on December

18th, the Corps then provided project generation to the extent that Southeastern was able to discontinue power purchases.

At the same time that the Corps was making its decision to limit generation to assure refilling by the summer recreation season, the Commander, South Atlantic Division, notified Southeastern, in a letter dated October 22, 1987, and I quote in part, "...in the longer range, my preliminary indications are that we likely will be unable to meet your current requested energy quantities, especially during the months of June through September...". end of quotation. We believe the statement was made based on the assumption of maintaining full pools during the recreation season.

Mr. Chairman, any decision to restrict the use of the power pool and therefore limit generation will have the effect of destroying some of the capacity and will reduce the dependability of the power during the summer months. If this occurs, Southeastern cannot maintain the argument that the preference customers should receive full credit for the capacity they receive from the Federal projects.

If some proposed restrictions are adopted, a cursory study shows that the Georgia-Alabama system could lose 25 percent of that capacity and the preference customers would be forced to replace that capacity at a conservative cost of $65 million per year.

It is important to remember that Southeastern is the Federal agency which is directed by Congress to market the power not required in the operation of the projects. Southeastern's allocation to the preference customers is based on power pool criteria supplied by the Corps of Engineers to the Congress. We hope the Corps will honor the contracts made in behalf of the United States of America with Southeastern's preference customers as they have in the past by taking no adverse action.

In an effort to help create a better understanding, Southeastern submitted a Memorandum of Understanding on future operations to the South Atlantic Division in December 1987 which is very similar to one Southeastern has with the Ohio River Division of the Corps and the Tennessee Valley Authority. The Cumberland Memorandum of Understanding has been in place and working very well since July 1, 1984. I am sure that the South Atlantic Division is as anxious as Southeastern Power Administration to implement the Memorandum of Understanding so the method of operation for 38 years is documented and that any future limitation of power production wil be based on historical knowledge and current facts to meet all Congressionally authorized purposes of the projects.

Mr. Chairman, unfortunately since January of this year, water conditions have deteriorated. We sincerely hope that this period of low inflows will come to an end soon. However, if current conditions do not improve, Southeastern will, as was done in 1986, be required to purchase energy to meet its contractual obligations during calendar year 1988. As of today, there is every indication that energy purchases will be required commencing in May of this year.

Mr. Chairman, this concludes my statement. I will be happy to answer any questions you may have.

STATEMENT OF THE CITY OF ARKANSAS CITY, KANS.

In 1986 the Arkansas City, Kansas, Flood Control Project, based on a study by the Tulsa Corps of Engineers Office dated May 1984, was authorized by Congress. This authorization followed a near "over topping" of the levee surrounding our community from the Arkansas and Walnut Rivers in October of 1985. This incident threatened the lives of some 4,100 persons living in the flood plain of Arkansas City as well as property estimated to value $437,000,000. It also threatened much of the economic "life blood" of Arkansas City, since over 1100 of the city's industrial jobs are in the flood plain. We are extremely concerned that this project move forward and that the City not suffer a catastrophic incident before it is completed!

Arkansas City is a community of 13,200 people, established in 1870, at the junction of the Arkansas and Walnut Rivers. The City itself has grown to the north in a linear fashion between the two rivers. Currently there are seven (7) miles of levee protecting the community, three (3) miles on the Walnut and four (4) miles on the Arkansas which protect the community. However, these levees are woefully inadequate in terms of height. Also, the structural stability of the sand levee on the Arkansas River is a major concern. The project would install a higher levee elevation and stabilize the Arkansas River levee with a clay earth cap. It would also dredge certain downstream portions of the Walnut River as it intersects with the Arkansas River to provide for improved stream flow.

Current Corps estimates anticipate a total cost of $15,000,000 with a Federal share of $11,200,000. The benefit to cost ratio based on existing property values and industry operations is 2.4. We are currently asking for funds to begin the initial engineering phase of the project. The corps request for FY 1989 is $400,000. Current estimates are that $900,000 would complete the field investigations, preliminary plans and final plans and specifications over a two and one-half year period. We are concerned that initial funding be secured before the five year deauthorization deadline in Section 1001A of the 1986 Water Resources Development Act.

The City has long perceived flooding to be a major problem to lives, property and economic viability of our community. For this reason the early efforts to construct the levees occurred. Also, the City is a participant in the regular flood insurance program. However, these measures do not eliminate the risk to our community.

In addition to our concerns about the life and safety of the citizens that live within the flood plain area, we also are greatly concerned about the potential of a major flooding situation to damage the major employers who are in the area, namely Ark City Packing Co. and Total Petroleum Refinery. These two industries are viable, going enterprises. Over $25,000,000 was expended by the two industries within the last year to upgrade and revamp their facilities in our community. These two companies employ over a thousand people, which is approximately twenty-five percent (25%) of the jobs in this City.

Attached to this letter are certain excerpts from the 1984 Corps of Engineers study on the project. If funds are appropriated for this project, the City of Arkansas City is willing and ready to proceed with this cooperative and joint effort to protect our community. We strongly urge the Committee to include funding to begin this project in the appropriations bill for 1989. Officials of the City will appear for questions or further elaboration if the sub committee desires.

Thank you for your consideration.

EXCERPTS FROM THE

INTERIM SURVEY REPORT AND
ENVIRONMENTAL IMPACT STATEMENT

ON THE

ARKANSAS CITY, KANSAS
FLOOD CONTROL ON THE
ARKANSAS AND WALNUT RIVERS

FLOODING PROBLEM (8)

The levees partly encircle property valued at over $437 million, including several large industries with the standard project flood plain. In all, about 1,900 structures have been built on the 2,100 acres in the flood plain, including about 1,780 residential dwellings and 100 industrial and commercial buildings. Industries in the flood plain employ about 1,100 people and an estimated 4,100 people live in the flood plain. Some flooding occurs from C Street Canal which drains part of northern Arkansas City and flows into the Walnut River. The combined existing flood plain of the Arkansas and Walnut Rivers and C Street Canal is shown on figure 3.

An event large enough to overtop the levee along wither river would cause levee failure and a wall of water would be released, producing devastating flooding as deep as 10 feet in industrial and heavily populated residential areas. The water would flow so swiftly as to be extremely hazardous to life and property. The majority of the damages would occur in the low lying, south and southeast areas of the city. Located in this area is the Total Refinery Corporation. If flood waters pooled deeply enough in the refinery storage area to cause the release of petroleum products, severe environmental damages would result downstream.

EXISTING AVERAGE ANNUAL FLOOD LOSSES (1-10)

Average annual flood losses under existing conditions for all reaches were estimated at $2.5 million. This represents less than 1 percent of the total value of flood plain property. Approximately $2.2 million in flood damages occurs to industrial property, mainly in Reaches A-1 and W-1. The next largest damage category is residential with almost $472,000 in damages on an average annual basis.

PROPERTY INVESTMENT (1-6)

The total investment in structures and property identified in the flood plain is estimated to be $437 million (based on 1983 prices and level of development). About $256 million is accounted for by industrial plants most of which is the oil refinery complex.

The second largest investment category is residential structures and contents. Within the flood plain there is about $81 million invested in these types of property.

CONCLUSIONS (63)

This study has shown that Plan C2 and Plan F2 can provide flood protection to Arkansas City at favorable benefit to cost ratios. The difference in plans is that Plan F2 provides protection north of C

Street Canal; however, that additional protection is not economically justified. Plan C2 was identified as the NED plan.

Several public involvement meetings, held during the course of this study, show that citizens of Arkansas City favor Plan F2. Federal financial participation in the construction of Plan F2 would be limited to that identified for Plan C2 because the increment of Plan F2 north of C Street Canal is not economically justified. Therefore, Plan C2 was used as the basis of cost sharing. The costs of providing additional a real protection along the Walnut River, including associated costs such as mitigation would be the responsibility of the city based on traditional cost sharing.

The City's willingness to not only share in and support the Federal recommendation but to provide at their expense additional area flood protection is expressed in their 15 May 1984 resolution of assurances contained in appendix 2, "Public Views and Responses".

In conclusion, the plan recommended for authorization is the NED plan, Plan C2. The total cost of Plan C2, in July 1983 prices, 7-7/8 percent interest, and 100 year project life is 14.06 million. Annual costs and benefits are approximately $1.49 million and $3.45 million, respectively. Excess benefits are $1.96 million and the benefit to cost ration is 2.3. If it is the decision of the city to add flood protection measures beyond those included in the NED plan, the city would be responsible for the additional costs of construction and mitigation.

STATEMENT OF THE NATIONAL ASSOCIATION OF REGIONAL COUNCILS

The National Association of Regional Councils (NARC) appreciates the opportunity to provide testimony to the Senate's Energy and Water Development Subcommittee on Appropriations regarding the proposed fiscal year 1989 appropriation for the Appalachian Regional Commission on behalf of the National Association of Regional Councils (NARC).

NARC represents a majority of the nation's 530 substate regional councils of local governments. Regional councils are agencies of local governments and operate under the direction of city and county elected officials. They fill a gap in our intergovernmental structure by dealing with problems that transcend jurisdictional boundaries and must be addressed on a regional basis. The basic responsibility of a regional council is to be an umbrella agency which facilitates regional coordination and management activities. Many regional councils also arrange for the implementation of regional policies.

NARC strongly supports the need for continued funding of the Appalachian Regional Commission (ARC). NARC is profoundly grateful to the the Committee for its unyielding support for the ARC since its inception. Without your support, there would not be an ARC and without ARC, many of the gains in Appalachia would not have been achieved. Among the major accomplishments of the ARC over its 23 year history are:

o infrastructure financing including water and sewer, vocational and technical schools, industrial parks, primary health care centers and tourism facilities;

o the establishment of the Appalachian Development Highway System;

o financial assistance to develop staff capacity of local development districts, which in turn provide technical assistance and training for local elected officials so they may more effectively administer public services and facilities, and provide leadership and a better life for their people.

Many regional councils are designated local development districts under the Appalachian Regional Development Act of 1965, as amended. For thousands of communities in the 13-state Appalachian region, local development district staffs provide the only professional assistance to governments, businesses and the public in the area of economic development. By working cooperatively through development districts, local governments and the private sector create areawide economic development plans and strategies that have helped to mitigate the effects of economic disparities in rural America, now further coupled with and exacerbated by shrinking federal resources.

Local development districts are an essential component of the federal, state and local partnership in Appalachia. By providing equity, efficiency and effectiveness in the administration of economic development programs with scarce ARC dollars, local development districts are achieving the most significant accomplishments of the ARC program in recent years.

For example, in the state of Kentucky, the Lake Cumberland Area Development District has been instrumental in developing innovative economic development programs leveraging small amounts of ARC funds in financing packages which include federal, state, local and private dollars. One project is a regional vegetable cooperative in which 600 farmers participate. A $165,000 ARC grant was used for site development. The state contributed $250,000 in economic development bond funds and $470,000 in CDBG monies. A local industrial development authority was established which borrowed $150,000 to buy the land for the cooperative. The farmers contributed $50,000 in operating capital and the Kentucky Department of Transportation contributed $75,000 for widening the access road. With the declining tobacco market, the project encourages farmers to convert some of their land to growing vegetables as an alternative to tobacco. Kroger Food Stores buy a majority of the cooperative's produce. This project has created 61 jobs on site in an area with 11 percent unemployment.

Another project which was begun in 1980, leveraged $49 million in private funds with $19 million in federal funds, a small percentage of which were ARC funds, to create 2,500 jobs. To date, 2,300 jobs have been filled and the company, Union Underwear, located in the town of Jamestown, in Russell County, Kentucky is currently hiring 70 new employees a week. In 1980, Russell County had an unemployment rate of 23 percent. Today, the unemployment rate is at 6.7 percent. The ARC funds were used to improve and expand the town's waste water treatment plant. Without these improvements, the company would not have been able to locate in Jamestown.

These are just two of the countless projects and programs on which ARC funds have been used over the last 23 years that have been instrumental in creating jobs and improving the quality of life in Appalachia.

NARC, however, does recognize that, because of the overwhelming need to reduce the Federal deficit, there has to be spending restraint in domestic as well as defense programs. In fact, at our 1988 Legislative Conference in February of this year, our Board of Directors adopted the following principle: "Except for low income persons and recipients of means tested federal programs, there should be a freeze on spending for domestic and military programs at FY 1988 levels." Therefore, we urge you to fund the Appalachian Regional Commission at fiscal year 1988 funding levels.

NARC applauds the Committee for its efforts, particularly over the last few difficult years, to assure adequate funding for the ARC which is so critical to the economic vitality and quality of life in Appalachia, and urge you and all members of Congress to continue this commitment.

Thank you.

STATEMENT OF THE UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE

I am writing you about the Upper Mississippi River System-Environmental Management Program (UMRS-EMP). The program is of national significance and of great importance to the States of Illinois, Iowa, Minnesota, Missouri and Wisconsin.

The UMRS-EMP was authorized under Section 1103 of P.L. 99-662, but work began on it several years ago. Our member agencies have had an integral part in program planning. However, we remain concerned that the President's budget request continues to fall short of the authorized funding level. If we are to see this program to fruition in the authorized 10 years, funding at or near the authorized level is necessary.

Soon you will be considering the President's Fiscal Year 1989 request for $7 million for the UMRS-EMP. The authorized amount for this second year of the program is about $20 million. We believe that it is imperative that you support minimal funding of at least $12 million to keep the program on track. The Upper Mississippi River Basin Association has identified $12 million as being fully justified. With this amount, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and our member states, as partners in this cooperative effort, would be able to fulfill a number of the responsibilities described in the authorization. We agree with and advocate the funding level proposed by the UMRBA.

The program will result in significant improvements being made to fish and wildlife habitat on this river system, a better understanding of river resources, increased recreational access, and data on the economic impact of recreation on local economies. This translates to protection of a nationally significant resource and better management for many public uses. It is a wise investment if we are to maintain balanced use of this multi-purpose resource.

Our Recreation and Water Use Section has a great interest in the recreation portion of this legislation. I would also like to point out that once again the President's budget includes no funds for the recreation project provision of the UMRS-EMP. As we stated in a letter to you last year, we believe that it is necessary for you to give the U.S. Army Corps of Engineers a clear expression of the intent of Congress to implement the recreation development portion of the UMRS-EMP.

Can we count on your active support for $12 million for FY89 for the UMRS-EMP? And will you help improve the priority for funding for the UMRS-EMP recreation development provision? If so, please communicate your views as soon as possible to the Subcommittee on Energy and Water Development Appropriations. If you have any questions, do not hesitate to contact me or one of the other state delegates on the enclosed list.

STATEMENT OF THE HON. JAIME B. FUSTER, PUERTO RICO

Mr. Chairman and members of this distinguished subcommittee; I appear before you today on behalf of the 3.5 million American citizens living in Puerto Rico, to set forth the FY 1989 funding requirements for the various studies and projects undertaken by the U.S. Army Corps of Engineers in Puerto Rico

All of the projects which I will discuss here today are on-going, and have been included in the Corps' Fiscal Year 1989 Civil Works Budget Request. One such is the Portugués-Bucaná Project, for $26,000,000. This project was authorized under the Flood Control Act of December 30, 1970. It consists of channel improvements and two high dams with reservoirs- one on the Portugués River; and the other on the Cerillos River. The two dams will store water for flood control, water supply and recreation. Additionally, the project will provide for enlargement of the Portugués River, enlargement of the Bucaná River, and a 1.3-mile diversion channel connecting the Portugués River to the lower Bucaná River. The project will essentially provide flood protection and a dependable water supply of about 33.3 million gallons per day to the city of Ponce and environs, on the South coast. At present, the channel works are 85% completed, while the Cerillos Dam is approximately 40% completed, at a cost of $120 million.

Another project, which is now initiating its design phase, is the Puerto Nuevo River project. This project is of major importance to the Commonwealth of Puerto Rico, since the Puerto Nuevo River cuts through the heart of metropolitan San Juan's commercial and financial districts, flooding these areas on a regular basis, and causing millions of dollars' worth of damage. Nearly 6,000 families are affected.

The main nucleus of federal and local government facilities on the Island, as well as the major transportation networks for San Juan, are severely affected. The General Post Office, the National Guard Armory, the Coliseum, and the Police Department Headquarters, are all located in the basin of the Rio Puerto Nuevo, and all suffer equally from the frequency and regularity with which this river overflows its banks. This project was authorized under Sec. 204 of the Flood Control Act of 1970; the Jacksonville District of the Corps of Engineers completed its report in October, 1984, at a cost of $1.2 million, and the Division Engineer recommended the study in November of that year. Furthermore, in September, 1985, the Board of Engineers for Rivers and Harbors recommended the report for implementation. The Corps of Engineers is presently undertaking Advance Engineering and Design for this project. Due to the urgent and pressing need for these flood control works, we request that the subcommittee recommend appropriations for this project in the amount of $2.5 million.

Several flood control studies in Puerto Rico need funding at this time, including the Rio Arecibo project, which was authorized by a Resolution of the Committee on Public Works and Transportation, adopted September 23, 1982. The Rio Arecibo basin has historically been subject to large-scale, destructive flooding. The greatest recorded flood occurred in 1899; the most recent, in 1985. These floods have severely impacted the city of Arecibo, on Puerto Rico's northern coast. As the urban, industrial and retail center for the whole of Puerto Rico's north-central region, Arecibo is home to almost 90,000 people. The towns of Utuado (35,000 inhabitants), Jayuya (15,000 inhabitants), and Adjuntas (19,000 inhabitants) have also been subjected to the frequent flooding of the Rio Arecibo and its tributaries.

This flooding has resulted in extensive property damage, and has caused severe disruption of transportation, communications and socioeconomic activities. The Administration has requested $160,000 for FY 1989 to study ways in which future disasters in this region may be averted. The Corps of Engineers has completed the initial reconnaissance report at a cost of $60,000, and the Survey Report is scheduled to be completed in 1990.

The Rio Guanajibo study in the western part of the Island was initiated under Section 204 of the Flood Control Act of 1970, as amended, as part of the Puerto Rico Cooperative Studies Program. The Rio Guanajibo basin, in the southwestern part of the Island includes portions of the municipalities of Mayaguez, Cabo Rojo, Hormigueros, San Germán, Maricao, and Sabana Grande. Discharges and overflows from the Rio Guanajibo represent a serious threat to life and property in these and adjacent municipalities, which experienced devastating floods during the passage of Tropical Storm Eloise in September of 1975. The study undertaken by the Corps of Engineers is for the purpose of evaluating flood damage protection measures for these municipalities. Although not as serious as the flooding problem, the study also addresses water supply considerations. The Survey Report was initiated in October, 1986, and the sum of $210,000 will be needed to continue this study.

Another study, which first received funding last year, is the Rio Nigua project. This project is of considerable importance to the residents of the southern part of Puerto Rico. The Rio Nigua basin is located in south-central Puerto Rico, and drains a 32.6 square mile area. Most of this watershed lies within the municipality of Salinas, which has a population of 26,000. The river's flood plain encompasses the entire town of Salinas and several adjacent settlements, as well as the southern section of Camp Santiago, a Puerto Rico National Guard training facility. Flooding affects about 200 acres of developed land, and over 800 families, and periodically results in damages in excess of $2 million. The proposed study would determine the scope, extent and severity of flooding in the Rio Nigua basin. I therefore request that the subcommittee recommend appropriations for this study in the amount of $100,000.

Finally, I would like to request $200,000 for Continued Planning and Engineering for the La Plata River project. At present, the Corps is looking into the flooding problems caused by the La Plata River at Toa Alta, Toa Baja and Dorado, and the adjacent communities of Mameyal, Ingenio, Campanillas and Levittown. Approximately 12,000 families are affected by the regular overflow of the La Plata River. The Feasibility Investigation Report was completed in April of 1987. The Board of Engineers for Rivers and Harbors recommended implementation of the project in April of this year, and it is expected that the Chief of Engineers will favorably recommend this project within the next few months.

I wish to thank the Subcommittee for giving me the opportunity to apprise it of the needs and concerns of the citizens of Puerto Rico. The projects I have described, most of which have already been undertaken by the Corps of Engineers, will have a tremendous impact on Puerto Rico, its economy and its people.

STATEMENT OF RUTH P. HUTCHINS, FRUITA, COLO.

I am writing to you in regard to the Congressional funding for the Department of Interior, Bureau of Reclamation, Colorado River Salinity Control Project, Title II, Grand Valley Unit, Stage II Development. Please make this letter a part of the Appropriation Committee's hearing record for budget requests being made by the Bureau of Reclamation for the fiscal year of 1989.

The Bureau of Reclamation knows all too well what it is doing, but there are questions that need to be asked in order to determine if the Bureau is doing its job of salinity reduction all too well. As a result, the salinity program is suffering. The following points are of concern:

I Escalating costs with less beneficial results
II Continued deviations from the revised development schedule
III Changes in the scope of the program and extent of construction
IV Duplication of services; curtailment of private owner's options
V Loss of credibility in the Bureau and State of Colorado

I have included an extensive reference section to provide material to substantiate statements and to present an overall account of the salinity control program in the Grand Valley of Colorado.

I. BUREAU'S ESCALATING COSTS WITH LESS BENEFICIAL RESULTS:

Implementation of the salinity program is determined in the most part by the cost effectiveness of the unit's increments. The annual salt load reduction measured in tons as a result of the program is translated into a measure at Imperial Dam of milligrams per liter (mg/l) of salt removed annually. The goal of the program is not to exceed an average annual salt load of 879 mg/l at Imperial Dam while the upper basin states continue to develop their compact--apportioned waters. The 1986 Salinity concentration at Imperial Dam was 579 mg/l or 300 mg/l below the established numeric criteria. (Water Quality Standards for Salinity. Colorado River System, 1987 Review, Proposed Report, pg. iv, Colorado River Basin Salinity Control Forum.)

The original plan of 1977 proposed by the Department of Interior and the Department of Agriculture had anticipated results of an annual decrease in salt loading to the Colorado River of 410,000 tons based on an annual valley wide salt load of 750,000 tons or an annual decrease of salinity at Imperial Dam of 43 mg/l. All the unit's canals: Grand Valley Irrigation Company (G.V.I.C.), the irrigation districts [Mesa County Irrigation District (M.C.I.D.), the Palisade Irrigation District (P.I.D.) and Orchard Mesa Irrigation District 1 and 2.] and the Government Highline Canal (G.H.C.) and all the associated laterals were to be lined. On-farm improvements and irrigation management programs of the Department of Agriculture's Soil Conservation Service (SCS) were included. The estimated cost in 1977 was $170,192,000.00. This was not implemented.

The Bureau substituted Stage I and Stage II for the 1977 Plan. Stage I was completed in April, 1983. 6.8 miles of the G.H.C. were cement lined, 30 miles of associated laterals were placed in pipe, an automated moss and debris removal structure was installed, and a field station built. The construction cost (actual "in the ground cost") was $20,629,577.00. Stage I prevents an annual salt load of 21,900 tons to the Colorado River and shows an annual reduction of 2 mg/l at Imperial Dam. The cost effectiveness is $121/ton. (1987 Joint Evaluation of Salinity Control Programs in the Colorado River Basin, Appendix B-1.)

In 1979-80 the Department of Agriculture created it's separate salinity program offered by SCS and the Agricultural Stabilization and Conservation Service (ASCS). Off-farm lateral lining, water management programs, on-farm improvements including land leveling and head ditch installation were offered on a cost-share basis. Agriculture's goal is a reduction of 230,000 tons of salt annually, at an estimated cost of $38,088,000.00 (Reference D pg. 35). This is 20.7 mg/l at Imperial Dam.

The Salinity Control Act was amended by Congress in 1984 and the amendments prepared the way for Stage II. Stage II Plans were approved in July 1986. The F.E.I.S. projected an annual salt load reduction of 120,000 tons based on an annual salt load of 580,000 tons for the Grand Valley by implementing the first ten of the fifteen listed increments. The last five were least cost effective and were deferred indefinitely. The predicted results: an annual salt load reduction of 120,000 tons or 10.8 mg/l at Imperial Dam. The estimated cost to be $192,080,000.00 and a cost effectiveness of $96/ton. (Quality of Water, Colorado River Basin Progress Report, No. 12,January 1987, D.O.I., pg. VII-12.)

The fifteen increments include membrane lining of the remaining 38 miles of the G.H.C.: the west, middle, and east reaches; and placing in pipe the canal's related 101 miles of laterals plus the lining and/or placing in pipe the private sector's remaining 177 miles of dirt laterals. No canals that feed the private laterals are included in Stage II.

The Verification Memorandum of May 16, 1986, corrected and revised the F.E.I.S. figures. The cost effectiveness, cumulative dollars per ton, for all fifteen increments decreased from $89 per ton (F.E.I.S.) to $92 per ton. The Bureau attempts to stay under the increment dollar per ton of $100. Planned construction of the first ten increments (three would be over the $100 per ton level) would reduce salt loading to the Colorado River by 113,100 tons annually or 10 mg/l at Imperial Dam. The total investment cost for Stage II was estimated at $206,730,000.00 in 1986. (1987 Joint Evaluation of Salinity Control Programs in the Colorado River Basin, December 1987 shows the costs effectiveness to be $105/ton, Appendix B-1.)

As a result of the new determinations in the Verification Memorandum (Reference B, pg. 23), private lateral miles to be improved have increased to 214 miles and the G.H.C. laterals to 110 miles. (Reference B pg. 23, 26). But the annual salt loading to the Colorado River from the private laterals (G.V.I.C., M.C.I.D., and P.I.D.) has decreased from 47,900 tons to 40,300 tons (Reference A pg. 4). The optimum results of the Grand Valley Unit, i.e. improving all fifteen increments could reduce the salt contribution to the Colorado River by 161,400 tons per year (Stage I 21,900 tons plus Stage II 139,500 tons) or 14.5 mg/l at Imperial Dam (Reference B pg 23). The total cost of Stage I plus the first ten increments of Stage II has increased to $252,735,000.00 (Reference B pg. 23).

The Department of Agriculture currently offers a 70/30 cost share salinity program which includes lateral construction, on-farm improvements, and irrigation Water Management program. SCS/ASCS cost effectiveness for all projects is $26/ton.

As of December 31, 1987, the cumulative results of Agriculture's salinity efforts are an annual salt load reduction of 35,799 tons of the project goal of 230,000 tons and an annual seepage reduction of 9,332 acre feet. The total cost share expenses to date are $8,703,657.00 and the total owner's cost to date is $2,027,824.00 for a total expense of $10,731,481.15. This is an annual salt reduction of 3.2 mg/l at Imperial Dam. (Reference D pg. 31 and 32.)

Before Reclamation's Stage II construction started $48,161,243.00 had been spent on the Grand Valley Unit by the Bureau (Reference B pg. 1), $20,629,577.00 on construction costs and $27,531,660.00 on what? (Reference B pg. 8)

Bureau's Stage II started in 1986 with the award of a contract for $4,135,815.00 to membrane line the remaining six miles of the west end G.H.C. and to construct related structures. Work began in Fall of 1986. By the following Fall of 1987 the job was about 86% complete and the contractor had a contract balance of $521,924.00. This figure plus an anticipated $580,000.00 more were required in early 1988 to finish the work before water was turned into the canal the first week of April 1988.

Also in 1986, five-year cooperative agreements among the two irrigation districts: P.I.D. and M.C.I.D., and the Bureau were signed for under $100,000 a year. In February 1987 a two-year cooperative agreement for $49,000 a year between G.V.I.C. and the Bureau was signed.

This is the project's current status.

A newspaper article in December 1987 (Reference B pg. 20) stated Congress had allocated $8.5 million to the Grand Valley Salinity Unit for fiscal year 1988.

How is this $8.5 million being spent? (Reference B pg. 10, 17-22).

The Project Data Sheet (Reference B pg. 5) "Construction Program" FY 1988:

"Government Highline Canal System:" $2,586,000.

What is the line item breakdown for the $2,586,000?
Less than half, $1,101,924.00 was needed to complete the West End Canal contract.
What geological surveys continue and where? (Reference B pg. 9)

"Grand Valley Unit Lateral System:" $4,357,000.00

What is the line item account for the $4,357,000.00?
What cooperative agreements were signed for land acquisition and what land is being acquired for lateral improvements? Bureau plans to ask for rights of way to be donated.
Have non-federal entities or owners of private laterals signed operation and maintenance contracts with the Bureau?
Where is the design data being collected?
The design data collection phase on the G.H.C. laterals, Middle Reach, has been suspended indefinitely. There is about 60 miles of design data collected and shelved. (Reference B pg. 9) Why?

"Wildlife Plan:" $1,582,000.00

What is the cost to the salinity program of the 518 acres made available by the B.L.M. for wild life habitat replacement?
What is the line item account for $1,582,000? (Reference B pg. 13)
Where is this $8,525,000 going?
Where did the $8,362,000 go that was allotted for FY 1987? (Reference B pg. 1)

Project Data Sheet 1/31/88 (Reference B pg. 23-29) "Construction Program FY 1989" (Reference B pg. 27)

"Government Highline Canal System:" $327,000.00

How much does it cost to conclude an O & M agreement that was signed in April 1986? (Reference A pg. 5)
What is the line item accounting for the $327,000.00?

"Grand Valley Unit Lateral System:" $6,287,000.00

What is the line item accounting for $6,287,000?
The Bureau stated that contracts for West End Laterals A 47-53 may be awarded in the amount of $2.6 million in FY 1989. (Reference B pg. 21.)
Also stated in the same article is: $1.2 million will be available for 1988 contracts for West End Laterals (Reference B pg. 21).
"Various cooperative agreements for land acquisition will continue."
What land is being acquired for laterals? Where? And for what price?
Have operation and maintenance contracts have been signed?

"Wildlife Plan:" $1,045,000.00

What is the line item accounting for the $1,045,000.00
A purchase is pending for 540 acres.
What is the purchase cost for this parcel of land?
Has an O & M agreement been signed with the Colorado Department of Wildlife?

II. CONTINUED DEVIATIONS FROM THE REVISED DEVELOPMENT SCHEDULE:

"Unit development is planned for a 20-year period with construction schedule to begin in fiscal year 1986 (see Construction Schedule). Although cost effectiveness was used as a basic criteria for determining the order of construction for the increments, other important factors were considered in the construction sequencing, including the status of operation and maintenance agreements with the water user organizations, preferences of local water users, and the need for a logical construction sequence.

Construction on the west end portion of the Government Highline Canal will be initiated before the laterals served by it. Re-aligning the canal after placing the laterals in pipe would result in future unnecessary expenses. The west end and middle portions of the Government Highline Canal laterals were scheduled before

privately owned systems because they are Federal project laterals that are the responsibility of the Grand Valley Water Users Association (G.V.W.U.A.) and because the United States already has an operation and maintenance agreement with the Association.

A new contract between Reclamation and the Association was signed in April 1986 for operation and maintenance on State I and Stage II features. Operation and maintenance contracts with private lateral organization entities will be signed later. An operation and maintenance agreement must also be signed with the Colorado Division of Wildlife Resources before wildlife measures of the plan are implements." (Reference A pg. 5) (Words underlined by Hutchins.)

If the Bureau were to adhere to its "Development Schedule" as outlined above, objections would be lessened. The Bureau has placed the improvement of the middle G.H.C. laterals (Reference B pg. 9) in limbo with construction postponed indefinitely. Why? Design data collected for these laterals has been put on the shelf. The project manager stated that the next construction money made available is to be used on the private laterals of the irrigation districts: M.C.I.D. and P.I.D. (Reference B pg. 17-18).

The Project Data Sheet, January 31, 1988, for FY 1989 (Reference B pg. 27) requests $6,287,000 for the Grand Valley Unit Lateral System to award a contract for the West End Laterals: A 49-53 of the G.H.C. This construction is in order according to the Development Schedule (Reference A pg. 6). Hopefully, this contract will be let and would be followed by a contract to pipe the laterals A 55-57 which are to be combined into a final lateral which will also be the end of the G.H.C., West End. This would conclude the construction of the West End G.H.C. and laterals.
"The West End and Middle portions of the G.H.C. laterals are scheduled for construction before the private laterals because they are federal project laterals that are the responsibility of the Grand Valley Water Users Association and because the O & M contracts is in place." (Reference A, pg. 5-7).

In addition to the organizational reasons, it is an established fact that "much of the ground water contribution of Valley Canal systems originates from the Government Highline Canal and its laterals" (Environmental Assessments, Grand Valley Unit, Colorado River Basin Salinity Control Project, Department of Interior and Agriculture, December 1977, pg. D-4).

Seventy percent (70%) of the Bureau's Stage II project goal of an annual salt load reduction of 113,100 tons would be accomplished if the Bureau would concentrate on its Project Canals and Laterals. 79,600 tons of the 113,100 tons annual salt load are contributed by the Government's own system (Reference A, Table I, pg. 4).

If the "preferences of local water users" is a valid consideration, the share holders of G.V.I.C. have stated their preference: work through Agriculture's SCS programs (Reference C pg. 8). The share holders said no to the question of G.V.I.C. owning, operating, and maintaining private laterals in 1985 (Reference C pg. 1); showed a preference for another entity other than the G.V.I.C. to contract with the federal government for the O & M in November 1986 (Reference C pg. 13) and through the Share Holders' Committee of January and February 1987, made recommendations to the G.V.I.C. Board of Directors to proceed cautiously and continue more study (Reference C pg. 15, 16).

Logical construction sequence would be to line the Middle G.H.C. before the Middle Reach Laterals. Canal re-aligning would not have to be done at an increased cost if the Middle Canal Section were improved before its associated laterals. When the local Bureau office was asked why there is a change in approach for the Middle Section from that of the West End, the reply was: "The difference is whether the advice came from a planner or an engineer."

III. CHANGES IN THE SCOPE OF THE PROGRAM AND EXTENT OF CONSTRUCTION:

An operation, maintenance, and replacement contract (O & M) between a non-federal entity and the Bureau must be signed before the construction of the Bureau's salinity control laterals begins. The Bureau is attempting to negotiate O & M contracts with the private sector for irrigation delivery systems that are not yet constructed, are not tested, that will be under new ownership and management by entities that have never managed lateral systems. The new systems will be rigid and inflexible to which land development and change will have to adapt at a large expense to the private individual (Reference D, pg. 21). New, fixed expenses of increased taxes and/or assessments, or tolls in order to pay the contracted base O & M costs will have to be paid by the irrigator.

In addition to the increased taxes locally, the U.S. taxpayer besides paying for the new construction, will be required to pay for the excess O & M cost above the predetermined Base O & M charge "in perpetuity." No one knows what this cost will be. The Bureau's predicted extra low to no increase cost on Stage I O & M has not materialized (Reference C pg. 25).

Is Reclamation improvising and extending the intent of the program in order to gain the support of the private sector? Reclamation is attempting to negotiate O & M contracts between private laterals that are already improved under ASCS/SCS programs and the proposed non-federal contracting entity. The selling point is: the prospect of replacing an older system with a new Bureau piped lateral, construction cost free, if and when money and incremental cost effectiveness come together and money is appropriated by Congress. This may happen within the next twenty to twenty-five years. The fact that the older system, generally a cement-lined ditch, is preventing seepage and consequently salt loading does not seem to be taken into consideration. A lateral may be eligible later for a new system if an O & M contract is signed now.

The Bureau states it will be the sole entity to determine efficiency of an existing system (Reference D pg. 14). The issue of lining or placing in pipe unimproved dirt ditches is not the prime consideration. Base O & M costs for an improved system before it becomes super improved will require innovative negotiation. The Bureau is proposing potential destruction of a working system in order to ensure the construction of an homogeneous, "goldplated" piped lateral system with the "construction specifications of an Hoover Dam" that will last 50-100 years. The expense of this construction "is too high for a farmer to cost share" but not too high for the American taxpayer to pay all costs. How will one get out from under the O & M expense of such an extravagant and non-destructible system in the future?

IV. DUPLICATION OF SERVICES AND POSSIBLE CURTAILMENT OF PRIVATE OWNER'S OPTIONS:

There is definite duplication and potential costly waste in involving the Bureau in the job that has been performed under the ASCS/SCS auspices for twenty-five years.

The presence of the Bureau in the private lateral improvement program has added two more entities with which the irrigator has to coordinate his activities. There is now a quintuple coordinating effort: the lateral owners, SCS, ASCS, the non-federal O & M entity, and the Bureau. Reclamation has asked the SCS/ASCS to realign their priority rating system for Agriculture Salinity Program cost share to conform with the Bureau's schedule of development:

> "The SCS will assign low priority to any off-farm improvements in areas where the B O R has completed their design data effort and submitted the information for preparation of design and specifications for construction. Construction will begin under normal circumstances, one to two years after submittal of design data. The B O R will revise schedules at least once a year and notify the SCS of delays in planned construction (Reference D pg. 16-17, 21, 26).

The Salinity Control Act (amended 1984) based its Grand Valley Unit implementation plan on the relationship between the Bureau owned project and the non-federal entity -- The Grand Valley Water Users Association (G.V.W.U.A.) which is the farmers' managerial association for the federal project. The Association bound by a repayment contract under the Reclamation Act has not been able to improve the federally owned laterals by cost sharing with ASCS. A very small number of laterals have been improved previously but lateral users paid 100% of the cost. As of 1986 only 9% (nine percent) of the federal laterals in Stage II had been improved vs. 60% of the private laterals (Reference D pg. 42).

This assessment of the Act's intent: contract for O & M between the Bureau and the Association is strengthened by the statement from Interior's Duvall in regard to G.V.I.C. laterals, "Reclamation is working with the Grand Valley Irrigation Company (G.V.I.C.) and others to devise an equitable and feasible proposal for incorporating these private laterals into the salinity program with minimum inconvenience and disruption to private landowners and operations. Participation in the lateral improvement program will be voluntary. We are not seeking to change the G.V.I.C. by laws..." (Reference C pg. 32) is verified by Sec. 202 (b) (4) of the 1984 Amended Salinity Control Act:

> "In implementing the unit's authorized to be constructed pursuant to paragraphs (1), (2), (3), (4), and (5) of subsection (a), the Secretary shall comply with procedural and substantive state water laws." (Reference E pg. 15-16.)

The Colorado Water Conservation Board (C.W.C.B.), the state entity named to aid the Bureau in bringing the non-federal private entities in line, has found it necessary to change the State statutes to enable the irrigation districts to be the contracting entity for O & M. The State statutes and the Articles of Incorporation of G.V.I.C. will also have to be changed, according to the C.W.C.B. to allow the G.V.I.C. to be the contracting non-federal entity (Reference E pg. 1).

Is the Bureau with the backing of Colorado buying the irrigators' consent with the promise of a construction cost-free irrigation system that usurps the cost-share program of Agriculture's ASCS? Have the irrigators in the Irrigation Districts been informed of their costs: loss of ownership of their laterals, loss of control of their irrigating water and operation of their laterals, and increased taxes "in perpetuity" to pay for the mandatory base O & M costs?

The Bureau finds it difficult to deal with individuals in right-of-way matters:

> "Issue #6 - (BOR) SCS Vehicle for Construction and O & M Rights of Way... the SCS is able to gain permission, perform the construction work, sign an O & M agreement with the landowner and leave the job with very little easement issue and Reclamation is interested in how they achieve this fact." (Reference D pg. 12, 17, 22, 24).

The SCS/ASCS continue to improve on-farm and off-farm systems on a cost-share basis. The farmer for the most part has confidence in the SCS and can see immediate results instead of waiting twenty years for the Bureau to use its appropriations in the Valley. For all practical purposes, interior should subsidize the farmer's cost share. The program would proceed at a much faster pace. It would be a true voluntary program, the most cost effective program for the private lateral improvements, the least disruptive, and the most readily accepted by the irrigators. The SCS has established credentials and is accepted. (Reference E pg. 7-11, Reference C pg. 34.)

If the Bureau were to pay the irrigators' cost so that Agriculture could also offer a construction cost-free system, the results would be encouraging: an affordable system that the local owner would own, operate, maintain, and replace at his expense.

Can the farmer afford the Bureau's system? Can the non-federal entity afford the Bureau's system? And, can the American taxpayer afford the Bureau's systems?

V. LOSS OF CREDIBILITY IN THE BUREAU AND THE STATE OF COLORADO:

The salinity program as up dated in the Verification Memorandum has good intentions: first line the government canal and place the government Laterals in pipe. 91% of these laterals are dirt ditches, unchanged since they were dug 70 years ago. 70% of the salt load to be removed annually by construction is a result of the Bureau of Reclamation's Irrigation Project of 1912. Fix it. The O & M contract has been signed for Stage I and Stage II. Design data has been collected for over 60 miles of government laterals waiting to be improved in Stage II. Good. Use the data collected and pipe the dirt laterals.

The irrigators who farm under the jurisdiction of the Grand Valley Water Users Association know the laterals are operated and maintained by the Association. They pay for the water based on land classification and the amount of water used. Water is ordered ahead of time for an arranged delivery date. The ways of the Bureau are familiar.

The irrigation districts are organized under state statutes. The water belongs to the land: 0.4 or 0.5 miners' inch to the acre. A yearly assessment per acre is paid for this water with the real estate taxes. Water runs freely in the laterals during the irrigation season at the discretion of the irrigators. The districts have a high density of water users to acres owned: 5,590 individual irrigators own 4,590 acres. Innumerable subdivisions and the Town of Palisade are included in the districts. The M.C.I.C. and the P.I.D. are included in the salinity program's first ten increments. Colorado Water Conservation Board succeeded in having H.B. 1092 passed by the legislature in this year. This bill enables the districts to <u>own</u>, operate, and maintain laterals under a salinity control contract, to contract with the federal government for an O & M contract and to tax and toll, and, to borrow and to enter into bonded indebtedness without limit.

Combined salt loading for the two districts' laterals is 17,300 tons annually or 15% of the total salt load to be reduced in Stage II. Their <u>canals</u>, Stub and Price, contribute 4,260 tons and 7,810 tons respectively. Although these canals are not included in the fifteen increments, the Bureau is talking positively of lining these canals in addition to improving the laterals.

Is lining 19.3 miles of the districts' canals in the schedule and prospectus for construction? What is the cost of this construction? What is the cost effectiveness of this proposed construction? The F.E.I.S. (Reference A' pg. 14) cited a cost effectiveness for the Stub Canal of $135/ton and for the Price Canal $140/ton. This is definitely over the desired $100/ton for the laterals. Is this a serious consideration of the Bureau's or an enticement to be denied? The Stub Canal is 90% cement lined. Not as thick or as well done, perhaps, as it would be if by the Bureau's specifications. Has an environmental assessment been made on this proposed addition to the F.E.I.S.?

Many G.V.I.C. shareholders already know the program is suspect. These G.V.I.C. shareholders know more salt is contributed annually to the total salt load through their canal seepage than through their lateral seepage. The Verification Memorandum shows 65,000 tons loaded annually from the G.V.I.C. canals and 23,000 tons through the laterals of which only 16,200 tons are included in the first ten increments (Reference A pg. 14). But only the laterals are to be improved by the Bureau even though 60% have been lined or placed in pipe.

Why?

Salinity control is water control.

> "Salinity control in the Grand Valley simplifies immediately to the restricted use of water resulting in a quantity that need not be diverted. The question immediately confronted is what happens and who obtains the water saved by salinity control programs in the Grand Valley. The legal constraint here is the possibility of forced abandonment of some of the decreed water right in the valley and the successive reapportionment to other users. Thus, the water use must be changed from irrigation to another desired use if it is to be left in the valley supply" (Evaluation of Canal Lining for Salinity Control in the Grand Valley, Skogerboe and Walker, U.S.E.P.A., Washington, D.C. October 1972, pg. 188). (Underline by Hutchins.)

Page 183 from the same reference:

> "...the first step in effecting a sound management scheme is the incorporation of more rigid water company controls."

The G.V.I.C. and districts' authority stops at the headgate.

and page 184

> "The Second aspect of management improvements involves the increased requirement of company personnel, equipment, and operation expenditures which would force an increase in the price of water to irrigators."

and page 183

> "None of these suggestions [canal and lateral rehabilitation, sound water measurement, and call periods for water] could or should be imposed too rapidly, since such a scheme would constrain to a large degree an already burdened way of life. However, a well coordinated plan for a gradual transition should be made. This, of course, means two things. First, a significant portion of some water rights would be left in the river subject to abandonment. Consequently, until the social, political, and economic objectives of the State of Colorado become clearly defined, it should be required that the right to use these excesses be left in the Grand Valley. The great need is obviously in examining the institutional framework of western water laws to change interpretations so provisions are made for incentives for more efficient water use."

The State of Colorado is working jointly with the Bureau: the state promotes legislative changes

The salinity control program was enacted by Congress to alleviate an accumulative salt problem in the lower basin states. The act passed because something had to be done and without remedial measures, development of compact apportioned water in the upper basin states would be curtailed.

Continued diversions from the Colorado River basin of high quality water (50-60 mg/l) to the eastern slope increases salinity concentrations in the river not only in California but also in the Grand Valley. The salinity control program does not improve the water quality of the Grand Valley diversions. The quality will continue to deteriorate as upstream diversion projects are developed. Decreases in water volume increases the salinity concentration.

> "The formula used for estimating the mean annual salinity reduction in mg/l at Imperial Dam is presented in the Quality of Water, Colorado River Basin, Progress Report No. 12, U.S. Department of Interior, January 1985 and is based on the level of development anticipated to occur by the year 2010. Based on this formula, the salinity at Imperial Dam decreases 0.91 mg/l for each 10,000 tons of salt removed and increases 1.07 mg/l for each 10,000 acre-feet of depletion upstream from Imperial Dam." (F.E.I.S. 1986)

The salinity control program exists to make additional diversions possible. Colorado River depletion projections shows a total of 326,000 acre-feet to be exported out of basin by 2010 (Quality of Water Colorado River Basin Progress Report No. 13 January 1987, pg. VI-3,Department of Interior). The salinity control program exists to mitigate detrimental effects of these diversions on water quality in the Colorado River at Imperial Dam. It appears that the salinity control program in the Grand Valley is a $252,000,000.00 federal subsidy for Colorado's eastern slope: Denver and the Metropolitan Water Providers' Two forks Dam and 1.1 million acre-feet Reservoir.

> "Methods for mitigating salinity impacts have been proposed by the Colorado River Salinity Control Forum and are being implemented. The seven Colorado River basin states, including the State of Colorado, and appropriate federal agencies are working together in the implementation of the identified basin wide solutions... with the continued implementation of desalination programs and the operation of existing projects, a salinity impact of the scenarios or other water development projects in the basin would be mitigated. Individual projects are not expected to be required to mitigate for project induced salinity changes in the Colorado Basin." (Metropolitan Denver Water Supply E.I.S., Volume XII Revised Technical Appendix 5, Chapter 4, page 127. U.S. Army Corps of Engineers, Omaha, March 1988.)

In this expensive number game, there is a question concerning the U.S.D.A. figures in regard to its goal. The predicted 230,000 tons of annual salt reduction is based on the 1977 Environmental Assessment (Department of Interior and Agriculture) updated by SCS's Supplement No. 1 On-Farm Program for Salinity Control, March 1980. In this Assessment (pg. C-3), it is stated the total annual salt load from the Grand Valley to the Colorado River is 650,000 tons to 850,000 tons or an average of 750,000 tons. The joint program for 1977 based on this 750,000 ton average was to remove 410,000 tons annually. The Bureau anticipated lining all the canals and all 450 miles of laterals for an annual reduction of 280,000 tons and the SCS on-farm improvements and Irrigation Management Service expected an annual reduction of 130,000 tons (Environmental Assessment 1977 pg. C 3-4).

In the Supplement No. 1, the SCS by using Plan 4 pg. 46 (Reference D pg. 35) increased its projected annual net salt reduction to 230,000 tons: "from Table 16, including 100,000 tons from lining 190 miles of off-farm laterals (40% of salt load reduction attainable through off-farm lateral improvements). If 100,000 tons is 40%, 250,000 tons is 100% of the annual lateral salt load - SCS does not cost share G.H.C. laterals.

The Verification Memorandum makes it clear the private lateral sector, i.e. the five G.V.I.C. increments, the districts M.C.I.D., P.I.D., and Orchard Mesa Districts 1 and 2 add 44,600 tons of salt annually and the G.H.C. laterals 49,700 tons for a total lateral load of 94,300 tons annually. It is difficult to understand SCS's figures of 100,000 ton reduction from lining 40% of the laterals.

The G.V.I.C. lateral increments are split by the Bureau's cost effective determinations. Three sections are included in the first ten increments: the Grand Valley Canal (with Mesa County Canal), Grand Valley Highline, and the Kiefer Extension and are part of the scheduled development plan. Two sections, the Mainline Canal and Independent Ranchmen's are under consideration but are excluded from the plan (Grand Valley II Balance U.S.B.R.).

All five increments would have the same opportunity for improvement if the laterals were improved by a joint Bureau/ASCS funding effort. Private lateral improvement under the auspices of this ASCS/Bureau cost share would benefit all private lateral owners, irrigation districts included, and the taxpayers, too. The SCS is the most cost effective construction at $26.00 per ton.

Thank you for your attention and time.

STATEMENT OF INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

The International Association of Fish and Wildlife Agencies, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces and federal governments of the U.S., Canada, and Mexico. All 50 states are members. The Association has been a key organization in the promotion of the principles of sound resource management and the strengthening of federal, state and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

TENNESSEE VALLEY AUTHORITY

The Administration's Budget Proposal for fiscal year 1989 is $75,973,000, a 29% reduction of $30,386,000 from fiscal year 1988. The proposed budget reduction would adversly impact water quality investigations, management planning and implementation; floodplain management; land reclamation and fisheries improvement efforts; toxics contamination control; flood control research; wildlife and timber management activities; air resources management activities; solid waste, hazardous waste, and water supply and wastewater activities; operation and maintenance of access areas; and environmental education work. The Association recommends the following increases:

Water Resources. Increase funding for water resources from the Administration's proposal of $2.2 million to $12.4 million. This level of funding is necessary to implement water quality plans on six TVA reservoirs, to improve the quality of reservoir releases below five TVA dams, and to monitor for toxic pollutants throughout the Valley. Work dealing with nonpoint pollution, bacterial pollution, floodplain management, groundwater protection and land reclamation can continue. All of these activities will have a positive impact on both sport and commercial fisheries, as well as the mussel industry.

Reservoir System Operations. Increase funding for reservoir operation to $24 million to provide for appropriate operation and management of reservoirs, recreation areas, and associated lands and resources.

Land and Forest Resources. Fund at the $4 million level to provide for the proper management of wildlife areas; reintroduction of wildlife; technical assistance in forest, wildlife, and recreation management; and environmental/energy education programs.

Resource Management and Development. $6 million is needed for mapping, acetic deposition research, air quality, and waste management programs. Artificial wetland demonstrations which treat sanitary, industrial, agricultural, mining or nonpoint source of wastes are of special interest.

Land Between The Lakes. A $7.3 million level of funding is required to manage the 120,000 acre national demonstration area.

In summary, the Association recommends that Congress approve a budget for TVA which is $19.93 million more than the President's budget request, to fully support TVA efforts in these critical program areas.

U.S. Army Corps of Engineers

The North American Waterfowl Management Plan was signed by U.S. Secretary of Interior Hodel and Minister McMillan of Canada in May of 1986. It is an ambitious plan, based on the 1916 Convention for the Protection of Migratory Birds, to ensure conservation of migratory birds in this Nation and Canada. Wetlands collect and store runoff, purify water, prevent soil erosion and provide habitat for many species of fish and wildlife, but this Nation loses approximately 500,000 acres of wetlands annually. The North American Waterfowl Management Plan has a goal of protecting close to 6 million acres of wetland habitat for waterfowl and other benefits associated with wetlands.

A budget of $3,317,098,000 is proposed by the Administration for the Civil Works Program of the Army Corps of Engineers for Fiscal Year 1989. The International Association of Fish and Wildlife Agencies recommends that $49,909,000

be added to the Corps budget for implementation of the North American Waterfowl Management Plan. Authorities provided to the Corps of Engineers in the Water Resources Act of 1986 are applicable and pertinent to implementation of the North American Waterfowl Management Plan. In addition, the Corps can contribute to the substantial cooperative efforts of private, state and other federal agency efforts to implement the Plan.

The Water Resources Development Act of 1986, the Fish and Wildlife Coordination Act, and the Flood Control Act of 1928, as amended, enable the Corps to play a significant role in the North American Waterfowl Management Plan. A sum of $32,595,000 is needed in the lower Mississippi Valley, $14,164,000 is required in the Gulf Coast area, and $3,150,000 is necessary in the middle and upper Atlantic Coast area. In the Gulf Coast area, four project modifications, costing $324,000, are recommended as authorized by Section 1135, or Section 1155, of the Water Resources Development Act of 1986. Three Federal Navigation Projects should be modified. They are titled, "Mississippi River Outlets in the Vicinity of Venice, Louisiana," ($62,000); the "Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana," ($62,000); and the "Atchafalaya River and Bayous Chene, Boeuf, and Black, Louisiana," ($125,000). In addition, the "Mermentau River, Louisiana," Federal Flood Control Projects should be modified to create marshes of high value to puddle ducks, lesser snow geese, and other wildlife, or alleviate saltwater intrusion in affected high value marshes ($75,000).

A sum of $8,000,000 is recommended to begin implementation of the authorized mitigation project for the Tennessee-Tombigbee Waterway in the Mississippi Delta and related lands ($4,000,000), and in the Mobile Bay Delta area ($4,000,000). Section 601 of the Water Resources Development Act of 1986 authorizes such an expenditure.

Similarly, $7,600,000 is needed to begin implementation of the authorized mitigation for the completed features of the Yazoo Backwater Project in Mississippi ($3,000,000); the Red River Waterway in Louisiana ($3,100,000); and the St. Francis Basin in Arkansas ($1,500,000).

In the lower Mississippi Valley, $5,000,000 is recommended to acquire valuable waterfowl habitat in coordination with the U.S. Fish and Wildlife Service.

A sum of $2,000,000 is recommended for design and construction of saltwater intrusion barriers at several sites in the Texas Gulf Coast area in consultation with the Texas Parks and Wildlife Department and with the Fish and Wildlife Service.

A total of $26,985,000 is recommended to increase the waterfowl carrying capacity and management potential of habitat currently in public ownership. The considerable design and construction capabilities and expertise of the Corps of Engineers is such that they can contribute measurably to this task as authorized by previously mentioned authorities. These funds are needed at: (1) Askew area in Tunica County, Mississippi, for reforestation and moist soil management ($700,000); (2) Yazoo National Wildlife Refuge Complex in Mississippi for design and construction of water control structures, an impoundment, and levees ($520,000); (3) FmHA Property Advice No. 28298 in Mississippi for design and construction of water structures ($50,000); (4) Overflow National Wildlife Refuge in Arkansas for moist soil management, reservoirs, levee work, water control structures, pumps, and gravel work ($1,760,000); (5) Yazoo Basin in Mississippi to acquire lands necessary to operate the Snake Creek, Collins Creek, and Wasp Lake structures to provide migration and wintering habitat for waterfowl ($4,700,000); (6) Reelfoot Lake National Wildlife Refuge in Tennessee to construct a sediment basin and impoundments that will enhance waterfowl management capabilities ($4,960,000); (7) Chickasaw National Wildlife Refuge in Tennessee for impoundments, moist soil management and a sediment basin ($600,000); (8) Cameron Prairie National Wildlife Refuge in Louisiana for renovation of water management system ($2,700,000); (9) Lacassine National Wildlife Refuge in Louisiana for riprap, pumping plant and bulkhead work ($4,000,000); (10) Alligator River National Wildlife Refuge in North Carolina for impoundments, water control structures, plugs and ditches ($300,000); (11) Cedar Island National Wildlife Refuge in North Carolina for an impoundment, a pump, bridge, and development of potholes ($1,000,000); (12) Mackay Island National Wildlife Refuge in North Carolina for bulkheads ($600,000); (13) Swanquarter National Wildlife Refuge in North Carolina for access, an impoundment dike, a pump, and water control structures ($550,000); (14) Savannah National Wildlife Refuge in South Carolina and Georgia for dike and road work ($700,000); (15) Big Lake National Wildlife Refuge in Arkansas to raise levees, impoundment, and floodwater elimination work ($2,200,000); (16) CacheRiver National Wildlife Refuge in Arkansas

for reservoir, water management, and moist soil work ($245,000); (17) Felsenthal National Wildlife Refuge in Arkansas for riprap, moist soil, and water control work ($260,000); and (18) Sabine National Wildlife Refuge in Louisiana to build wave break levees, develop waterways, and install rock weirs ($1,140,000).

In conclusion, this level of recommended funding would permit the Corps of Engineers to take a positive position in enhancing and preserving some of the most important wintering waterfowl habitat remaining in North America.

SUBCOMMITTEE RECESS

Senator JOHNSTON. That completes our hearing and the subcommittee will recess, subject to the call of the Chair.

[Whereupon, at 3:48 p.m. Thursday, April 14, the subcommittee was recessed subject to the call of the Chair.]

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